Development and Scale-up of 'Improving Children's Learning' Model through Community Participation in the African Region
Project Completion Report

March 2022

Japan International Cooperation Agency (JICA)

Asuka World Consultants CO., Ltd.

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Table of Contents

Attachments

List of Figures & Tables

Chapter 1 Overview of Project Research

1-1 Introduction

This report summarizes the results of trials and studies into learning improvement models for overcoming the learning crisis in Africa, based on global evidence and field experience under the project research "Development and Scale-up of 'Improving Children's Learning' Model through Community Participation in the African Region" (hereinafter referred to as the "survey research"). In Chapter 1, the background and purpose of the work will be introduced, and in Chapter 2, the elements for an effective approach toward improving children's basic literacy and numeracy skills will be examined by looking at international trends in learning improvement based on the results of information gathered from domestic literature and field surveys. In addition, this chapter will extract the achievements (successful results) and issues (challenges) seen up to now of the learning improvement models used by the 'School for All' Project, which is JICA's representative project contributing to the improvement of basic education with strong community participation, and will summarize the results of a cross-sectional analysis with other successful models. Chapter 3 presents the conceptual design of a "trial model" that, by bringing together several successful models identified in the previous chapter, can be expected to make maximum use of the features of those models and have a synergistic effect on learning improvement, and presents verification results for pilot activities in Africa. Chapter 4 describes the results of a feasibility study for the introduction of educational improvement that is based on the Schools for All model in Africa. In the final chapter, the results of these analyses will be summarized and the direction that learning improvement models should take in future will be suggested.

Due to the fact that many of the researchers engaged in this survey research are simultaneously involved in community-based learning improvement projects implemented by JICA in Africa, the findings of these projects have been included as part of this report. This is because reflecting the experiences and lessons learned from the "School for All" project groups in African countries in this survey research would be useful in examining a highly versatile model for improving academic performance.

During the implementation period of this survey research, the global spread of the novel coronavirus became worse and education sites in developing countries have been greatly affected by school closures and preventive infection measures[1] toward the reopening of schools. A number of restrictions were imposed on travel and activities in connection with this survey

[1] WHO, UNICEF, the Red Cross and others have provided guidance on the reopening of schools, including the classroom layout, provision of sanitary facilities, obligations to wear masks and adjusting school schedules to prevent infections. Checklists, etc., for safe school management after the reopening of schools have been created, and support is being provided by each organization or agency.

research. However, research work was completed mostly on schedule by taking a flexible approach while reviewing the plan.

1-2 Project Background

The world still has 260 million children who are not in school and many countries face serious learning gaps. In particular, it is estimated that more than 80% of school-age children in Sub-Saharan Africa do not have minimum literacy and numeracy skills,[2] and many schools are dysfunctional as places of learning. The World Bank in its World Development Report (2018) used the term "learning crisis" for the first time to stress the need to improve learning as an urgent task that the international community should tackle. Moreover, in October 2019, aiming to accurately assess the current status of the learning crisis and monitor the situation for improvement, the World Bank launched the Learning Poverty Rate (LPR), a new indicator defined as the percentage of 10-year-olds who cannot read and understand a simple story, and proposed a global goal of "cutting the LPR by at least half before 2030". Having a high percentage of poor learners, particularly in developing countries, can be a primary factor that impedes achieving other international education goals and other related targets of the SDGs, and there is a need to urgently tackle this[3].

Due to the circumstances, JICA has implemented community participation-based education projects in a number of countries in the African region. In particular, the 'School for All' Project being implemented in the West African region and Madagascar is an effort to improve the learning conditions for children by means of collaboration between communities and schools, by strengthening capacities pertaining to school management from schools through to a central level, improving school management through community participation, and by providing support to the learning of literacy and numeracy skills of children. In order to cope with the serious learning crisis in Africa, it is necessary for the large majority of children to master a certain level of learning content in a short period of time, and this requires the construction of mechanisms for improving learning to realize this goal as well as measures for scaling up in the African region. In addition, prolonged school closures due to the impact of the novel coronavirus pandemic over recent years, which have particularly led to learning losses in developing countries and amongst families in poverty, have made conditions even worse than ever before, and this requires urgent measures to address the learning crisis.

Based on the above background, through this survey research models for improving basic academic skills in response to the learning crisis in Africa will be discussed based on JICA's comparative advantages, experience and knowledge, and international evidence. In addition, the

[2] UNESCO. 2017.
[3] World Bank https://www.worldbank.org/en/topic/education/brief/what-is-learning-poverty

feasibility of introducing such models in countries where similar JICA projects have not yet been implemented will also be discussed so as to develop a community participation-based education model for the African region over the medium to long term.

1-3 Project Purpose

The purpose of this survey research is to devise a model for effective basic academic skill improvement in response to the learning crisis in Africa which is based on global evidence and field experience, and to examine expansion strategies for the model. Specifically, there are the following two points.

(1) Proposing a model that is effective in improving basic academic skills and can be expected to have high rollout feasibility and cost effectiveness, taking into account JICA's comparative advantages, experience and knowledge, and international evidence.

(2) Studying the possibility of introducing such a model to multiple countries in the African region in order to expand it in the African region over the medium to long term.

1-4 Project Period

February 2019 to February 2022

1-5 Scope of Work

The five activities of this survey research are shown in Figure 1 as first term contract implementation period (Phase 1: February 2019 to September 2020) and second term contract implementation period (Phase 2: October 2020 to February 2022).

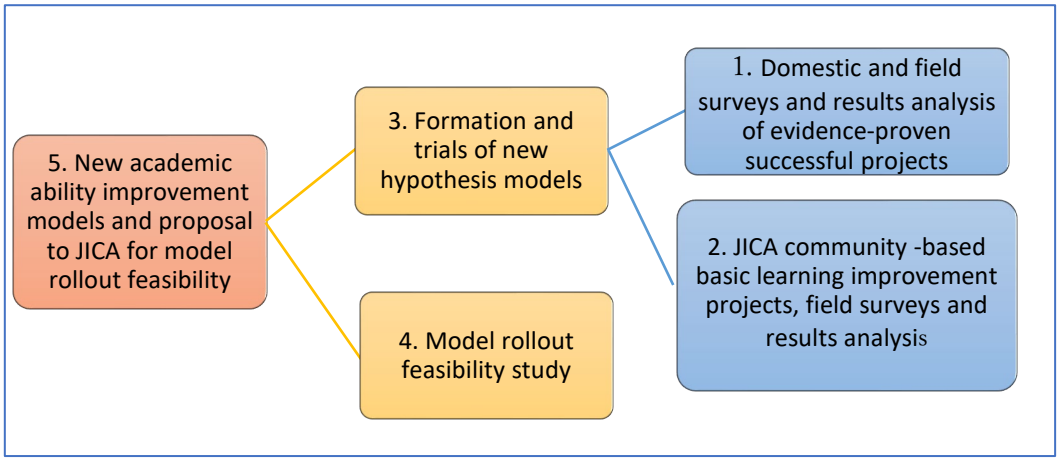


Figure 1-1: Scope of Work

During first term of contract (Phase 1), data was collected and analyzed on existing JICA

community participation-based basic learning improvement projects, and successful projects by other donors, through domestic and on-site surveys ((1) and (2)), and successful models concerning learning improvement were identified based on the results of these analysis and information collection. In addition, pilot activities were carried out in Ghana and the feasibility of developing and rolling out a new academic skill improvement model centered around 'School for All' was examined ((3)). During second term of contract (Phase 2), while taking into account the results of the previous phase, a synergy model was developed that incorporates effective approaches to learning improvement and support was given for implementation trials in Malawi, Madagascar and Niger ((3) and (5)). In addition, a feasibility study on education improvement models by means of community participation was carried out in several countries in Africa through phase one and two, and the possibility of the future introduction of a new model was examined ((4)). The results of research activities in each phase are summarized in the progress report as shown in the table below.

Table 1-1: Status of Issued Research Reports

Report	Issued	Main content
Progress Report 1	August 2019	Overview of JICA's approach to improving learning at schools via 'School for All' Project, ICT introduction feasibility study, impact literature survey, and identification of successful models for improving learning
Progress Report 2	February 2020	Progress of pilot activities in Ghana, current status of learning poverty and results of successful model observation
Phase 1 Work Completion Report	July 2020	Comparative analysis of successful models, verification of effectiveness of the School for All approach to improving learning, potential of integrated models and proposal of new hypothetical models (Niger, Madagascar and Ghana)
Progress Report 3	May 2021	Detailed comparison of successful models (Structured Pedagogy, TaRL, and ESMATE) Progress reports on trials in Niger, Ghana and Malawi
Progress Report 4	September 2021	Results from international academic research, examination of new hypothesized models, and progression of feasibility study on model

		introduction (Malawi)
Project Completion Report	February 2022	The final report summarizes the research content and results from the past three years and includes recommendations for the future

In this project completion report, the scope of work of (1) and (2) shown in Figure 1-1 is summarized as “Chapter 2: Information Collection and Analysis Concerning Successful Models,” (3) “Chapter 3: Trials and Verification of Learning Improvement Models,” and (4) “Chapter 4: Feasibility study on Model Introduction.”

Chapter 2 Information Collection and Analysis Concerning Successful Models for Improving Learning

2-1 Survey Methodology

2-1-1 Survey Methods

This survey research aims to analyze strategies and programs that have been proved to be effective for improving learning in other countries or regions and verify their versatility in order to cope with the learning crisis. Data on successful models in this chapter was collected through literature survey, such as investigation into reports and academic papers by international organizations, visits to successful programs of other donors, interview surveys, and analysis of teaching materials, and also through online information sharing with the targeted program personnel and participation in international seminars, etc. In addition, the research team visited eight successful program sites in order to conduct detailed investigation, held four information sharing sessions with implementing agencies, and implemented eight workshop and seminars. The details of these activities are elaborated upon in Progress Reports 1-4 (see Attachment 1 for accomplishments and achievements).

2-1-2 Definition of "Academic Ability"

"Academic ability" in this report is the acquisition of measurable basic knowledge and skills known as "reading, writing and math", which corresponds to Target 4.6 "Universal Literacy and Numeracy" under Education Goal 4 of the Sustainable Development Goals (SDGs). In international discussions on the quality of education in recent years there has been a continuing emphasis on the acquisition of knowledge, and moreover nurturing skills, abilities and motivation that adapt acquired knowledge to unknown or changing situations.[4] Even as such learning systems develop and become diversified, as an important element in the creation of new knowledge, there has been no change in the continued importance of acquiring basic academic knowledge, and basic literacy and numeracy skills can be regarded as forming the foundation for educational success for children in all respects. Consequently, although the capability of this survey research is limited to basic literacy and mathematical knowledge and skills that can be acquired in the short term, this project has the objective of improving learning by creating opportunities for children to demonstrate their own potential over the long term, and by linking them to the ability to support lifelong learning.

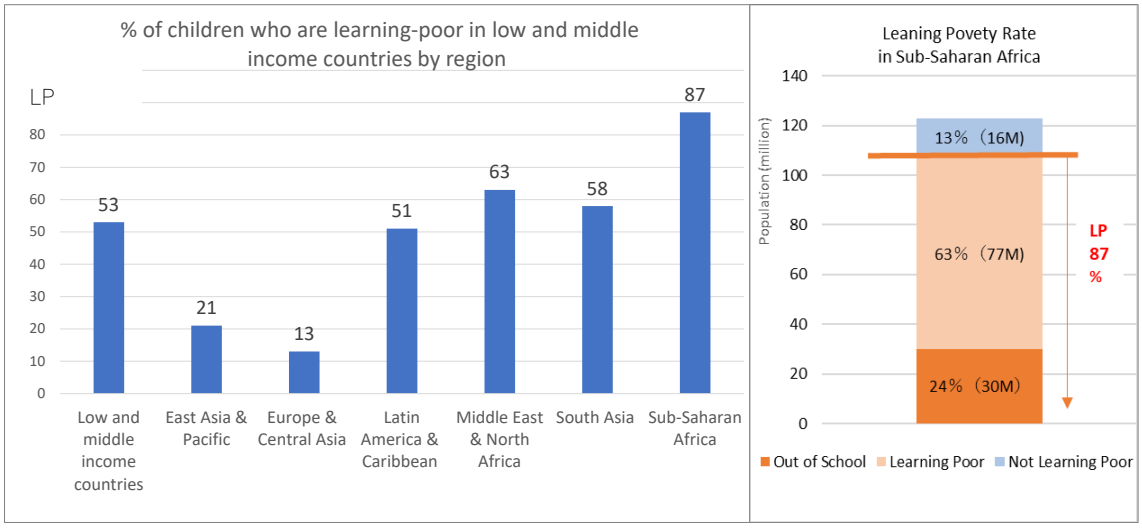
[4] OECD (2019)

2-2 Learning Crisis in Africa

The greatest challenge for the basic education sector in Africa is the dysfunctional state of school systems caused by weak government governance. In addition, in recent years there has been a growing disparity in learning due to inabilities to keep up the delivery of already inadequate education services for a rapidly growing school-going population.

The elementary school enrolment rate in Sub-Saharan Africa improved from 68% in 1990 to 98% in 2015, and the number of enrolled students increased from 63 million to 152 million. However, focusing on quality of learning, it is clear that more than 80% of school-age children in the region do not reach minimum academic standards, and this is a critical situation. According to the World Bank (2019), under the current pace of academic improvement approximately 43% of children in Lower Middle Income Countries (LMICs) are predicted to still be in learning poverty in 2030.[5]

In addition, school closures due to novel coronavirus outbreak have had a severe impact on the learning crisis, with the most pessimistic scenarios predicting that learning poverty in LMICs will increase by 10 percentage points from 53% to 63%.[6]



Source: World Bank (2019)

Figure 2-1: Percentage of Learning Poor by Region[7]

While the school attendance rate has improved, the extremely high percentage of students who do not have basic academic skills suggests that schools are not able to provide adequate

[5] The World Bank (2019).
[6] Azevedo, João Pedro (2020).
[7] Figures are based on the learning poverty situation at the conclusion of primary education (10-14 years old). The Learning Poverty indicator is adjusted by the percentage of children who fail to reach a minimum reading level and the percentage of children who are not attending school (presumed not to have acquired sufficient knowledge). Learning data is calculated based on benchmarks for national and international learning assessment formulated by each country, and with reference to the definition of minimum learning achievement by the Global Alliance to Monitor Learning (GAML).

learning services. Due to the introduction of free primary education policies resulting in a rapid increase of children attending schools there is a lack of classrooms, teaching materials, class hours, there isn't a fair distribution of teachers, nor enough teachers, and the abilities of children are not being developed. It is a situation where an appropriate learning environment has not been established. In addition, problems also include curricula that do not suit the needs of learners and the low quality of teaching caused by a lack of appropriate teaching methods and instruction mediums.

In addition, the growing population in Africa is a factor that is exacerbating the learning crisis. United Nations population projections for the 2015-2050 period indicate that future population growth will be concentrated in the African region. Currently, 60% of the population in Africa is aged between 0 and 14 years old and between 15 and 24 years old, and the proportion of this young population is on a growing trend. For this reason, the estimated number of children of primary school age is highly likely to increase from 100 million in 2017 to 150 million in 2030[8]. As such, there is a need to provide education services that can guarantee opportunities to attend school, as well as high quality learning, for this growing number of school age children.

Against these circumstances, African countries have been aiming for education reforms to improve the quality of learning by means of large-scale education development programs. While these education plans incorporate comprehensive reform proposals, such as building classrooms to improve learning environments, improving curricula and teaching methods, handing out textbooks, training large numbers of high-quality teachers and ensuring their fair distribution, and ensuring class hours, in reality, systematic reforms are not being put into force because of weak implementation structures at central and local levels, and because of a lack of coordination within and outside of organizations. It is highly possible that positive learning outcomes will not be achieved even if reforms do make progress, and moreover, even if there is temporary successful desired education reform, it is predicted that it will take a long time to realize the outcomes.

In response to the critical learning crisis that Africa is currently facing, there is a growing need for a basic academic skill improvement model that enables a rapidly growing child population to acquire literacy and numeracy skills in a short period of time, while leaving unchanged existing conditions at education sites.

2-3 International Discussions and Evidence on Learning Improvement

2-3-1 Accumulation of Evidence

Impact assessments on education improvement in developing countries have increased from a

[8] Estimated based on UNESCO and United Nations demographics

mere 19 in 2000 to 299 in 2016[9]. Currently, the buildup of evidence on the intervention effect of education improvement programs is progressing rapidly, for example, 267 impact assessment programs in the education sector have been posted and published on the Abdul Latif Jameel Poverty Action Lab (J-PAL) website[10]. Against the background of growing impact assessments, there is an increased focus on evidence-based policy formulation and practice in various fields of international development. In the education sector in particular, the shift in focus from schooling opportunities to the quality of learning and the accompanying expansion of assessments at the international and regional levels are said to have influenced the increase in the number of impact assessments since the 2010s[11]. In addition, under the set goals of the SDGs, the standardization of benchmarks and indicators for "the minimum language and math skills that should be acquired" for the lower grades of elementary schools and at the end of primary education has progressed[12], and it has become necessary to visualize the learning effects of development assistance.

While it can be seen that the results of impact assessments and data on cost-effectiveness tend to have an increasing importance than ever before on policy formulation, it has been pointed out in international comparative studies, etc., that determining how to apply evidence collected in different contexts to specific countries and policies is difficult. Many programs also face challenges with scalability, such as the fact that although they can show learning improvement effects in small to medium-scale pilots, they have not always been established as models based on the premise of being scaled up, and so many programs are confronted with scalability challenges, such as the effects not always continuing when they are scaled up. While there has been a rapid increase in impact research, there have been developing discussions among practitioners and researchers on techniques for producing "evidence" by donors, quality assurance, external validity, the interpretation of results, and their utilization[13].

2-3-2 Factors Affecting Learning Improvement

The "Learning, To Realize the Education Promise" published by the World Bank in 2018 listed four important factors for schools that have an effect on academic performance. These are "learners," "teachers," "school input," and "school management." The poor preparation of systems for the functioning of these influential elements in the education sector in developing

[9]. Bashir (2018).
[10] https://www.povertyactionlab.org/evaluations (last accessed December 6, 2021)
[11] World Bank (2018), Banerjee et al. (2020)
[12]The Global Proficiency Framework defines the minimum level of reading and mathematics skills that are expected to be acquired between grades 1 and 9. Global-Proficiency-Framework-18Oct2019_KD.pdf (unesco.org)
[13] Piper et al. (2018). Williams(2020)
For example, researchers such as Professor Keith Lewin at the University of Sussex points out issues with the purpose, scope, and methodology of analysis in "Smart Buys" report (2020). Open discussions have been conducted between the two sides on the issue of impact analysis.

countries is considered to be the cause of the lack of learning outcomes. In Africa, in particular, in order to solve the shortage of teachers for the rapidly growing school population, measures have been taken to hire unqualified and underqualified teachers and to shorten teacher training, which has led to a decline in the quality of teaching.

Furthermore, discrepancies between curricula and children's skills, diverse communication languages, an absolute obsession with curricula, a lack of class time, and repetition of inefficient teaching and learning content, etc., have obstructed the provision of good quality learning opportunities[14].

Systematic reviews have been carried out since 2015 to comprehensively analyze the results of education impact studies in developing countries, and there has been progress in identifying programs that have been shown to be effective in overcoming the complicated learning issues. For example, according to the largest systemic review of the education sector by the International Initiative for Impact Evaluation (3ie), which was published in 2016, Structured Pedagogy, which aims to improve lessons to encourage systemic changes in education content and methods through the provision of curricula, teacher training and continuing support, and teaching materials, etc., for improving children's basic academic abilities, has the largest and most consistent positive average effect. This is followed, under some conditions, by effective interventions such as increasing class hours, remedial activities, community-based monitoring, school meals, and giving scholarships to excellent students[15].

In addition, there is growing awareness that highly cost-effective intervention models are indispensable for overcoming the learning crisis, and in 2020 the Global Education Evidence Advisory Panel (GEEAP) carefully examined the evidence gathered from previous researches or studies and put the following effective interventions in a ranking format.[16]

[14] World Bank. (2018).

[15] Snilstveit et al.(2016) The impact of educational programmes on learning and school participation in low- and middle- income countries. Systematic review of impact assessments on enrolment and learning outcomes for 238 programs in 52 LMICs implemented by the International Initiative for Impact Evaluation (3ie) from 1990 to 2015.

[16] Banerjee et al. (2020)

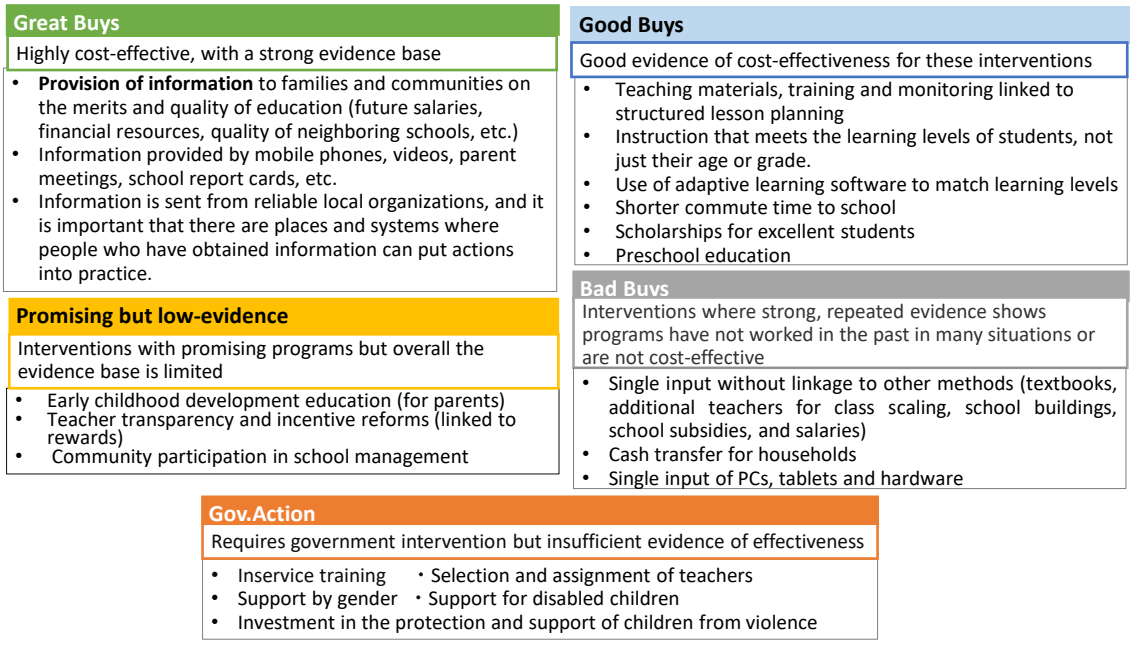


Figure 2-2: Cost-Effective Learning Improvement Interventions

In many developing countries there is a problem that as a result of matching standards to the education of the elite class, curricula, textbooks, and exams are being applied in ways that are out of step with the actual learning levels of children. The cost-effective interventions described above are methods for moving toward targets (provision of support for learning at appropriate level) without drastically changing overall systems. For example, the most cost-effective interventions pointed out in "Great Buys" in Figure 2-2 were to provide information on the benefits of education to parents and communities, followed by Structured Pedagogy, a systemic change in educational content and methods involving teaching materials, teacher training and monitoring, Target Teaching Instruction, provision of education according to the level of each learner, Scholarships with conditions, and the introduction of adaptive learning software, etc., as shown in "Good Buys". Community participation in school management, teacher accountability and incentive reforms are "promising options but with low-evidence" interventions, and for more accurate cross-sectional analyses, they are areas where further future evidence collection is expected from LMICs.

2-3-3 Elements of Effective Interventions

The results of previous research reviews have clearly shown that a number of factors are connected to learning crises in Africa, such as a lack of teaching personnel, knowledge and skills, content that doesn't meet learners' needs, a lack of learning time, and weak organizational

structures, and that effective interventions directly approach these factors. There are a variety of intervention methods and targets for learning improvement. Among those, information has been organized with a focus on the following five elements, which multiple evidence has shown as having an impact on basic academic ability improvement[17].

(1) Improve Teaching Methods by Structured Pedagogy

It has become clear in impact assessments in recent years that input alone, such as training and teaching materials, have limited learning improvement effects, but combining interventions such as evidence-based curriculum revisions, lesson planning, and developing teaching materials, in addition to support for the professional development of teachers and systematic teacher training policies, has been shown to be effective in strengthening consistency between teaching content and teaching methods.[18].

(2) Provide Content Based on Assessment to Meet Diverse Learning Needs

Improved learning means absolutely having the education services and teaching materials most needed by learners, and achieving this requires the implementation of appropriate assessments and feedback. As an emergency step for children with low academic attainment, programs with teaching that matches the actual proficiency learning level of children, rather than the grade level or age of the child, are increasing. Although there are some criticisms that learning according to level of proficiency can create discrimination among children due to academic ability and hinders collaborative learning,[19] as shown in Figure 2-2, this kind of learning is effective in mastering basic skill areas, such as readings and calculation skills.[20]

(3) Guarantee Learning Opportunities and Learning Time

The large positive correlation between teacher instruction time and children's test scores is also shown by, among other indicators, the results of PISA implemented in 50 countries, and it is well known that quantity of learning directly affects outcomes. In addition, it has also been shown that ensuring time on task for learners, having teachers impose learning activity tasks on all classmates, and setting “reading, writing and discussion” tasks can have an impact on elevating learning effectiveness[21].

(4) Strengthen Organizational Structures and Accountability

It is necessary to establish a mechanism to ensure system transparency, improve efficiency, and improve the quality of education. It is essential that such a mechanism is linked to the incentive systems of learners, teachers, administrators, and parents to get continuous results. The

[17] Please refer to the Phase One Work Completion Report for details.

[18] Sunsvit(2016), Piper(2016), etc.

[19] Sato（2004）

[20] Benerjee et al. (2016), etc.

[21] Lavy (2015), Molina et al. (2018), Bruns, B. & Luque(2014), etc.

verification of accountability effects in relation to quality of learning in School Based Management (SBM) policies since 2000 shows that just providing information does not improve the learning outcomes of children. However, when parents are given the means to influence education systems, then information plays an important role for improvement[22]. It has also been pointed out that there is a need for training in order for local communities to correctly understand the results of monitoring and assessment.[23]

(5) Interventions in lower grades

Children who have not mastered reading skills within the first years of elementary school often tend to have to repeat school years, or drop out of school altogether, in comparison with children who have mastered these skills, and the gap in the skills proficiency only widens over time, pointing to the importance of early intervention[24]. Evidence is limited, but there are indications that, in regards to calculation skills as well, early learning is associated with later learning success, and this tends to affect the grade retention rate of students.[25] The correlation among reading, math skills and learning in other subjects is also well known, and one primary factor that has been contributing to improvements in subsequent learning efficiency is the acquisition of basic academic skills, such as reading, writing, and calculations, at an early school age.

2-4 Results of Field Survey on Effective Programs

Taking into account the factors affecting academic ability and international trends identified in 2-3 above, detailed investigations were carried out into highly versatile programs with huge intervention effects on learning improvement as "successful model" candidates. In particular, in on-site surveys further information was collected on the success factors and challenges for implementation systems and operations which were not adequately obtained in the previous literature survey.[26] The target programs for the on-site surveys are shown in 2-1 below.

Table 2-1: Results of Field Survey on Effective Programs

Target country	Programs (main implementing agencies)	Content	Factors affecting academic ability (see p. 10)
Kenya[27]	PRIMER/Tusome (USAID)	Complex intervention package involving teacher training, teaching materials and	Improvement of teaching

[22] Mbiti, IsaacM. (2016), Read and Tamar (2016), etc.
[23] Eddy-Spicer et al. (2016) , Blimpo et al. (2015).
[24] RTI International(2015).
[25] Evans et al. (2019).
[26] Further details about the field surveys in each country are presented in Progress Reports 1-2 and the Phase One Completion Report.
[27] As for PRIMER/Tusome Program in Kenya, online interviews were conducted with project management personnel and researchers rather than meetings face-to-face due to the novel coronavirus outbreak.

		coaching to improve teaching. Successful nationwide rollout after pilot testing of effectiveness.	methods (1), Learning time (3), Organization system (4), Early intervention (5)
Madagascar	Mahay Mamaky Teny (USAID)	Achieved improved performance with an effect of 0.2-0.37 (SD) in a short period of time through structured pedagogical package involving training of teachers for enhanced coaching, teaching skills and teaching materials.	Improvement of teaching methods (1) Learning time (3) Early intervention (5)
Zambia	Catch-Up (TaRL-Africa)	As a pilot project, the effects of regular, long-term leave and remedial lessons were verified in this program, after which the TaRL remedial lesson model was expanded to 1,800 schools over a three year period from 2018.	Meeting learner needs (2)
Ghana	STARS (UNICEF, IPA)	Target instruction for 4th to 6th graders by regular teachers. Lack of teacher competency to teach students according to their level of proficiency is a subject that needs to be addressed.	Meeting learner needs (2)
India	TaRL (Pratham)	The following were confirmed as new TaRL activities: Learning improvement from preschoolers to lower secondary school students at entire villages, full-scale intervention for lower grade students, expansion and rollout of government model, and the possibility of TaRL-PMAQ linkage.	Meeting learner needs (2)
India	Mindspark (Education Initiative)	Self-directed, individualized learning with adaptive learning features contributes to improved math and language performance. Bottlenecks include content updates, annual software fees, and three-year license contracts.	Meeting learner needs (2), learning time (3)
Sri Lanka	Surara-Ninja (SuRaLa Net Co., Ltd.)	This is characterized by interactive animation math teaching materials for BOP layer, and difficulty settings according to the level of understanding. Confirmed importance of facilitator training and support systems. Challenges for introduction include use of local languages and fund collection.	Meeting learner needs (2), learning time (3)
Ghana	ENEZA (ENEZA Education)	This is a digital self-study course using mobile phone SMS that is cheap and easy to access even in remote areas. It is not intended for students in lower grades.	Meeting learner needs (2), learning time (3)

As for “1. Teaching method improvement by means of Structured Pedagogy”, the survey research team investigated on the USAID-supported cases of Kenya and Madagascar, where the Structured Pedagogy program, described in the next section, was found to be particularly effective in its impact assessment. The two programs were designed to provide comprehensive

support for teachers, including teacher training and coaching, in addition to input such as textbooks, teacher guidebooks, and supplementary reading books. However, in addition to differences in the implementing organizations, there were differences in the intervention phase, for example, Kenya was in the post-pilot national deployment phase of a model while Madagascar was at the pilot phase. Consequently, it was pointed out that in contrast to "Tusome" in Kenya, which in principle used the same methods while reducing the cost of textbooks and training through repeated improvements, "Mahay Mamaky Teny" in Madagascar had sustainability challenges in terms of cost and operations due to the handing out of practice books and the length of teacher training. This confirms that not all Structured Pedagogy put into practice in different countries has a significant effect, and that there is variation. A success factor of the program in Kenya is the high level of "reproducibility" and "sustainability" in regard to how teachers faithfully carry out established teaching routines in line with the guidance in teacher guidebooks. The class improvement rate of teachers is more than 80%, and this can be linked to the improvement of the academic abilities of children.

Regarding "2. Meeting diverse learner needs," the "Catch-Up" program in Zambia is a good example showing how enhanced stakeholder information sharing has helped principals and administrators understand the Teaching at the Right Level (TaRL) approach, and how logistical capacity building has worked well to secure and use teaching materials. In addition, it is believed that the promotion of ownership and donor coordination by the Ministry of General Education of Zambia has contributed to ensuring sustainability. On the other hand, challenges in the TaRL program have been flagged as the low attendance rate of children at remedial lessons and the weakness of monitoring systems. Moreover, the importance of information sharing among stakeholders was also confirmed for motivating participation in the program and monitoring.

In ICT program (MindSpark, Surara-Ninja) surveys conducted in India and Sri Lanka on "2. Meeting diverse learner needs" and "3. Learning time", an increase in learning volume was by means of providing learning opportunities and a learning effect from the provision of content that meets individual needs were observed. However, just having software with high quality content is not enough, and it was seen that the key to success is training high-quality facilitators that give instruction in classrooms. As such, while the programs were emphasized in the literature survey in terms of high impact and success, field surveys revealed that the programs have problems in terms of cost, human resources, organizational structure, and scalability strategies. It was also confirmed that the programs that do repeated trials and improvements to overcome these challenges can be successful models that are highly sustainable and versatile.

2-5 Identifying Successful Models

2-5-1 Selecting Successful Models

Taking into account the results of the literature and field surveys, a highly versatile approach that enables the vast majority of children to master basic literacy and numeracy skills in a short period of time under African learning environments with limited school input and capacity was selected as a successful model. The three conditions for selection were: (1) demonstrated a high impact on improving academic abilities, (2) high cost-effectiveness and track record as scalable rollout models, and (3) expected versatility and sustainability in the African region. An overview of the selected successful models, (1) Teaching at the Right level (TaRL), (2) Structured Pedagogy28, (3) *Paquet Minimum Axé sur la Qualité*: Minimum Package for Quality Learning (hereafter referred to as "PMAQ") are summarized in Table 2-2.

Table 2-2: Successful Model Overview

Teaching at the Right Level (TaRL)	This is a speed learning method developed by the Indian NGO the Pratham Education Foundation in the early 2000s to improve children's literacy and numeracy skills by level of their proficiency. A model for improving academic levels in a short period of time (usually 30 to 60 days), in which children are grouped according to their level of proficiency, rather than age or grade, based on the results of the Annual Status of Education Report (ASER), an assessment on literacy and numeracy skills that can be administered with simple training, and the facilitators promote interactive activities tailored to each child's level of proficiency.
Structured Pedagogy	This is an approach aimed at improving learning content and teaching methods and changing teaching practices. It aims to change classroom habits to enable all children to steadily learn by clarifying the knowledge and skills that should be mastered at school and provide scaffolding for teachers who have particularly poor skills. This approach has the systematization of learning content and the improvement of teaching methods at its core, and this is linked to the comprehensive support of lesson improvements by creating a package of input, such as teacher training, coaching, textbooks, lesson plans and teacher guidebook.
PMAQ	This is a learning improvement model developed by JICA's Technical Cooperation Project "School for All" to support educational development through community participation in Niger, which is composed of a school management component and a teaching materials and teaching methods component. PMAQ aims at improving learning by implementing academic ability testing for children, sharing test results with parents, teachers and local residents at community meetings, and doing remedial activities that are supported by local residents using math drills and remedial learning facilitators. This bottom-up approach achieves cooperation between parents, teachers, and local residents through the sharing, and discussion of, information concerning children's learning at the school level.

Next, the following table compares the typical characteristics of the representative programs of the three models.

[28]The term of Structured Pedagogy does not have a universal definition, and it is not used consistently to refer to the same set of interventions, but it is independently defined and used in reports and papers. For this reason, this survey research intentionally uses the original term "Structured Pedagogy" instead of a Japanese translation.

Table 2-3: Comparison of Successful Models

Successful Models	TaRL	Structured Pedagogy	PMAQ
Representative program	India Learning Camp	Kenya PRIMER/Tusome	Niger PMAQ
Major implementing organizations	NGO Pratham	USAID (RTI International)	JICA
Aim of intervention	Basic reading, writing and math	Basic reading	Basic math
Intervention target	3rd to 6th graders	1st to 3rd graders	1st to 6th graders
Intervention target time (years)	Extracurricular hours (40 hours) (direct type)	Approx. 150 hours based on statutory class hours of the curriculum	Extracurricular hours Approx. 100 hours
Key components	1. Academic ability tests, 2. Grouping by proficiency level, 3. Teacher training, 4. Mentoring	1. Teacher training and coaching, 2. Textbook distribution, 3. Lesson planning and teacher guidebooks	1. Academic ability tests, 2. Information sharing (community meetings), 3. Remedial lessons, 4. Math drill, 5. Facilitator training
Condition (1) Impact on academic improvement	・ Mean of 0.7 (SD) in language and math ・ Particularly large effects on students with the lowest grades	・ Swahili, English, mean 0.2-1.0 (SD) ・ Math, mean 0.1-0.4 (SD) ・ 80% of teachers devote 80-85% of their teaching hours to teaching ・ Highly effective for low ability students	・ Improvement of 0.36-0.38 (SD) in basic mathematical skills in 4th grade (1 region in Niger) ・ 30 point correct answer rate improvement in basic math amongst 1st to 4th graders remedial
Condition (2) Cost effectiveness and scale-up	・ Development of indirect regular teacher-led model at more than 100,000 schools in 14 states in India, and implementation of direct volunteer model at more than 4,000 schools ・ $7-15 cost per child nationwide	・ Pilot → Rollout to public elementary schools nationwide for all 1st to 3rd graders ・ Approximately $8 cost per child	・ Pilot → Rollout using external funds (GPE, etc.) ・ Costs can be reduced in the point of being able to improve in a short period of time. ・ $7-10 cost per child (successful cost reduction model implementation in Madagascar) ・ Rolled out by the government to about 3,400 schools in Tillabéri Region
Condition (3) Versatility and	・ ASER is a simple, easy-to-understand	・ Early Grade Reading Assessment (EGRA)	・ Expansion to English-speaking

sustainability in Africa	and highly versatile assessment tool ・ Expansion of TaRL-Africa through research and financial support such as J-PAL and Co-Impact	is available in over 120 languages in 70 countries ・ Based on strong evidence of success examples in Kenya, similar teaching method improvement package interventions have increased	countries in Africa as it is centered on French-speaking countries in Africa such as Senegal, Mali and Madagascar

SD = Standard Deviation

It can be seen that while these three successful models have set common targets of improving learning, but they take different approaches to elements that impact on children's academic performance and they produce different results. A common point is that with limited resources, methods are established from an awareness of problems, in other words how to remove the effects that accompany the insufficient, or uneven, abilities and skills of teachers and instructors, secure learning time for children, and provide stable learning support.

To put it more simply, Structured Pedagogy increases substantial classroom teaching time by means of script-type teacher guidebook that can ensure a certain quality of teaching regardless of teacher quality in regard to the task. TaRL provides assessment-based, proficiency-based teaching with facilitation techniques to increase remediation time. PMAQ creates learning time through community participation, and tries to overcome challenges of poor learning content through self-learning drills.

2-5-2 Comparison of Successful Models

The following covers the results of a detailed investigation of the success factors and challenges of the three successful models. The development history, approach and impact of each model are further described in Attachment 2. This section describes specific characteristics of each of the three models by putting a focus on success factors that make use of the strengths of the models and challenges.

The success factors and challenges of the first successful model, PMAQ, are as follows.

Table 2-4: Characteristics of PMAQ

	Successful Model 1: PMAQ
Success factors	(1) **<u>High versatility of foundation model and functionality as a catalyst to activate learning improvement models (functionalization)</u>** This model has the strength to be universally adaptable in any country from the point that it works in terms of the elements needed to motivate human action, such as expectations for success, valuing results, fairness, and success experiences. This is

	achieved through the experience of a cycle, that is to say nurturing a sense of ownership through highly transparent and fair organizational management in which there is information-sharing and decision-making with all stakeholders at community meetings where everyone can participate, feasible activities planning, and confirmation of the results of activities. (2) **Versatility (high-quality and versatile learning tools) in the provision of high-quality learning tools owing to systematic drills and practice workbooks that have guaranteed systemization** The math drill book adopts a simple structure that enables learners to study based on what they have learned and without stress, and without detailed instruction from teachers. This provided learners with superior learning opportunities and simultaneously contributes to improving the quality of teachers. (3) **Versatility of mechanisms to complement coaching through school visits (building highly versatile organizations and strengthening systems)** The model has a meeting-based monitoring mechanism for School for All that does not rely on a visits, such as the creation of a federation of school management committees, and the combination of feedback from existing training sessions and school principal meetings, and it can address the challenge of conducting coaching without increasing costs, which would require additional personnel and additional costs. (4) **High expandability of model that enables integration with diverse learning improvement models (compatibility and expandability)** The School for All education improvement model has a mechanism to reactivate many existing learning improvement models by encouraging information-sharing and transparency. In this sense, it has the potential to complement and expand improvements by being flexible in regard to situations in other countries, and integrating with other learning improvement models.
Challenges	• Since the learning activities are mainly based on remedial lessons, consistency and linkage with regular curricula is a weak point. Often in developing countries there are issues with the quantity and quality of regular curricula, and it is not a simple task to intervene to revise or to make adjustments in the curricula of regular classes. • Reducing printing and distribution costs of drills and shortening the time it takes for procurement processes are challenges for the large-scale rollout and expansion of the model. • The facilitators who are responsible for providing proficiency-based teaching in an appropriate and flexible manner are required to have a certain level of ability. In particular, there is a need to improve the teaching ability of facilitators at higher levels of proficiency, and there is a challenge in ensuring the quality and quantity of human resources. • It is difficult to secure active learning time in the remediation time.

The success factors and challenges of the second successful model, TaRL, are as follows.

Table 2-5: Characteristics of TaRL

	Successful Model 2: TaRL
Success factors	**(1) Provision of learning that meets learners' needs (levels)** Possible to carry out assessments and provide learning content based on results to meet individual needs. By doing assessments on a regular basis, it is possible to promote learning at an appropriate level while confirming the degree of learning achievement. By using a drill in which necessary learning contents are carefully selected, the quality of learning contents that does not depend on the teacher's quality is guaranteed, and individual learning time is guaranteed. **(2) High versatility due to simplified activities** Due to the content of simple ASER tests being easy to understand, and the tests having a

	simple implementation procedure, implementation and interpretation of results are clear. The purposes of the teaching and different activities are clear and simple, and the methods for the introduction and learning retention are consistent. **(3) <u>High effectiveness and efficiency by means of ensuring consistency in the implementation of activities</u>** Even if the learning content is different, unifying the implementation method of activities means a learning pattern is formed, and a learner can easily learn independently. As a result, the amount of active learning time of the learner is maximized within learning time, and it is possible to produce maximum results in limited time. **(4) <u>Reading and basic math programs are established</u>** Literacy ability is connected to poor performance in basic math, but TaRL has established a program that has shown improved learning outcomes in reading as well as mathematic. This eliminates the math underachievement caused by the inability to read and maximizes the learning outcomes of the basic math program. **(5) <u>High efficiency through efficient use of limited resources</u>** The model came about as it was selected following repeated trials across all of India, and the efficiency and reusability of resources such as teaching materials is very high.
Challenges	・ In the "direct type" Learning Camp[29], instruction is mainly carried out by Pratham staff and volunteer assistants. Teachers have little involvement, and the know-how of the Learning Camp does not remain at a school level. ・ The "indirect type" Learning Camp (government model) makes it highly likely for teachers to learn model methods, but after the intervention ends, the teachers normally return to the normal curriculum and teaching materials. Whether or not results can continue to be produced by utilizing the Learning Camp techniques in classes is influenced by the desire and abilities of teachers and the school environment. As such, one challenge is sustainability in schools. ・ In activity-based learning it is not possible to guarantee the learning of learners without activities having a clear purpose. Therefore, teachers being able to reproduce activities is important. As support for ensuring this reproducibility depends on mentoring, the abilities of mentors and the frequency of mentoring is given needs to be secured. ・ There is a well-established pattern for learning development in which facilitators show examples, do group practice, and finish with individual practice. However, there is a need to firmly secure a budget for giving out teaching tools, as they need to be given to all students, so that individual practice can take place. ・ There is a challenge in ensuring consistency with learning contents regulated under the curriculum and in the capability to develop to learning contents of higher grades. ・ Appropriate and frequent mentoring and follow-up of instructors setting activities at schools is an effective method, but it is difficult to secure monitoring personnel, materials and funding.

The success factors and challenges of the third successful model, Structured Pedagogy, are as follows.

Table 2-6: Characteristics of Structured Pedagogy

	Successful Model 3: Structured Pedagogy
Success factors	**(1) <u>Measures to improve teaching methods to ensure a more systematic and consistent approach</u>**

[29]There are two types of TaRL. One is a remedial lesson program (direct type) led by Pratham staff and volunteer facilitators, and the other is a government program (indirect type) with set teaching time devoted to TaRL instruction given by regular teachers at target schools.

	The curriculum and teaching materials should be organized in a systematic manner to ensure a systematic learning area and content order, and should be linked to previously learned knowledge for retention. Classes are taught with content implemented in line with lesson plans described in the script type guidebook, and this maximizes teaching time by developing the teaching routine of "teacher demonstration ("I do"), let's do together ("We do"), and learner activation ("You do")." **(2) <u>Reduced teaching complexity and teacher burden</u>** The integration of elements that are separated by teaching material revisions, and by carefully selecting teaching contents, restricts volume appropriately. An environment is created in which teachers can easily put activities into practice through the simplification of teaching methods and teaching materials, and this increases the program implementation rate of teachers. **(3) <u>Provision of multi-layered touchpoints to support teachers</u>** Teachers can learn teaching methods and build their confidence due to as many opportunities as possible being created for them to interact, learn, and talk with instructors, coaches, and other teachers. The frequent provision of touchpoints for teacher training and support ensures transparency while simultaneously confirming the challenges teachers face, and this is reflected in program improvements. It is effective that teacher guidebook are closely linked with textbooks, and they provide scaffolding according to teacher experience, and in addition that all information needed for classes is in one place. **(4) <u>Nurturing the knowledge, skills and autonomy of teachers</u>** It is an approach that enables teachers to learn on their own even when adequate training can't be provided. It is also a model that uplifts the autonomy and self-confidence of teachers by providing them with opportunities to not only try new teaching methods, but also to repeat again and again their practice and reflection by using script-type teacher guidebook of moderate volume. **(5) <u>Feasibility of scaling-up within existing systems</u>** In Kenya, a small experimental intervention (PRIMER) was implemented with consideration for future scalability, and a highly cost-effective national deployment model (Tusome) was developed with reduced costs and improved monitoring efficiency. The functionality of the organization was strengthened by strongly linking existing systems with incentives such as the distribution of teaching materials and the monitoring of administrative officers.
Challenges	• The model is on the premise of a class environment, teachers must be in attendance, schools must be open, and class hours must be secured. The model is easily affected by external influences such as poor public order and strikes. • There has to be a sufficient amount of teaching materials that can be handed out to children and teachers at the appropriate time, and costs and logistics for continuous teacher support should function as a system. • Cyclic coaching is highly effective, but hiring excellent teachers and securing budgets are problems. • Teachers are required to have a high level of skill in order to incorporate formative

	assessments and continuous learning assessments of children into classes, and implement instruction according to the results of these assessments. • The long-term effects of Structured Pedagogy, its application to higher grades, and the linkage between reading and math have not been sufficiently verified.

2-5-3 Successful Model Interrelations

Structured Pedagogy is an approach to improving regular teaching that focuses on teachers and promotes the systematization (Structuring) of teaching strategies within existing administrative systems. It has a strong impact on improving basic academic skills by improving the amount and quality of teaching provided by school teachers. In contract, TaRL is a remedial learning model that focuses on learners, and has the aim of steady learning acquisition at the individual pace of learners with different levels of proficiency by providing teaching materials that meet the learning needs of the learners. The two big approaches of the EGRA/EGMA-based USAID-supported Structured Pedagogy and ASER-based Pratham TaRL have demonstrated high learning effectiveness, and both are expected to continue to be rolled out in future in Africa with Western philanthropic funding. On the other hand, it became clear through the literature and field surveys that there is a theme of a need to further strengthen the organizational structures, such as monitoring and feedback, etc., to ensure both the steady implementation and quality of interventions.

In turn, the School for All is an approach in which through the sharing, and discussion of, information related to children's learning between parents, teachers and local residents, under the facilitation of a school management committee, activity plans are formulated and implemented, including remedial learning activities owing to cooperation between these actors. Through PMAQ, the incentive mechanism can be added to enhance the quality of the above regular classes and remedial lessons, and promote sustainable development via a local resident bottom-up approach. If the weakness of organizational structures for the steady implementation of learning activities can be complemented by a new learning improvement model, then it is expected to improve the quantity and quality of educational services by encouraging the functionalization and revitalization of each model. The table below indicates the potential that can be expected for a synergy effect with the other two successful models, while utilizing the strengths of the School for All approach found in the previous section.

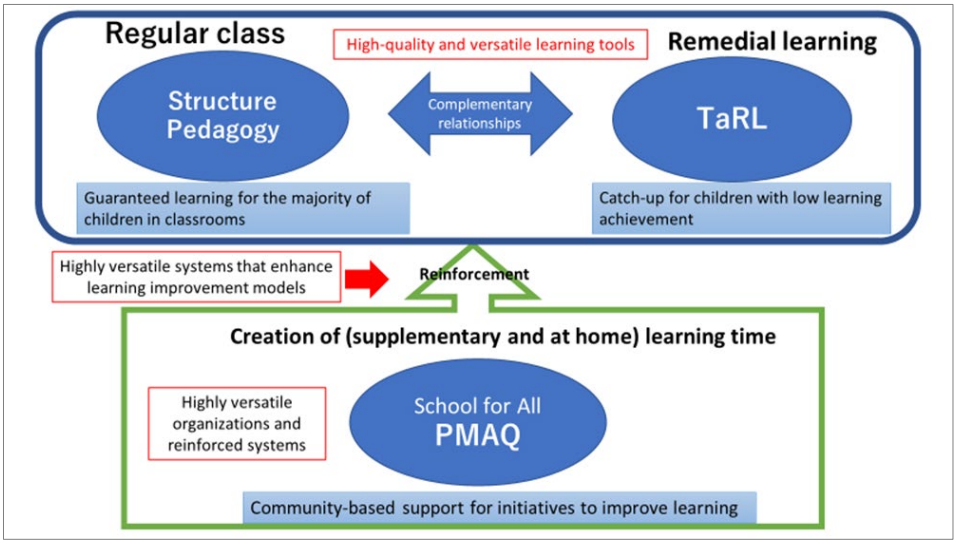


Figure 2-3: Relationship between the Three Models

2-6 ICT Introduction Feasibility Study and Results

In recent years, together with the development of Information & Communication Technology (ICT), various ICT promotion programs have been introduced in the field of education. Expectations are growing for ICT as a tool that can answer all of the causes for the learning crisis in Africa mentioned previously, such as a lack of number, knowledge and skills of teachers, content that does not meet learning needs, insufficient learning time, and weak organizational structures. In this survey research, the research team also examined the possibility of introducing a new model utilizing rapidly developing ICT educational tools. Based on the results of the literature survey, introduced programs were observed, such as India's Mindspark[30] and Japan's SuraraNinja[31], etc., which are improving test scores by providing electronic math and language materials that meet the level of proficiency of learners, and their suitability for the Sub-Saharan area, which is facing a learning crisis, was verified. As a result, although a high degree of completion was confirmed for learning tools, there were many problems that had to be resolved to adapt them to African countries, and it was determined that it is difficult to carry out field verification in this survey research. The major challenges are as follows.

1. The communication infrastructure in Africa is still weak, and there are major infrastructure development problems, such as a lack of communication infrastructure, particularly in rural areas.
2. Similarly, many ICT tools intensely analyze educational data online and improve and

[30] Muralidharan, Karthik, Abhijeet Singh and Alejandro J. Ganimian. 2019. "Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India." American Economic Review 109 (4): 1426-60.
[31] Products provided by SuRaLa Net Co., Ltd.

deliver educational programs in a timely manner. As such, it is very difficult to use them offline due to the weakness of communication infrastructure, or even if they can be used, the characteristics of this technology are not fully utilized.

3. A lot of ICT for education is developed by private companies, while in African countries, where no progress has been made in what is known as “public-private partnerships” in which private companies participate in public services, the systems themselves for improving public services by making practical use of private funds and private know-how don’t exist (this has been particularly affected by inabilities to negotiate license fees, which are the sources of revenues for private companies).
4. In connection with (3) above, there is a need to customize various programs to match linguistic and cultural contexts of different African countries, but this requires a lot of time and effort.

In addition, besides direct ICT teaching materials for learners, the ICT tablets used by target teachers and target monitoring staff also face the above-mentioned challenges, and as such ICT tools will not be used as components for pilot activities of this survey research.

Since 2020, the spread of the coronavirus has led to the rapid worldwide development of ICT in the educational sector, and international organizations and development partners tend to invest in DX (Digital Transformation) and ICT of public services. In this survey, it was decided not to make ICT-based interventions as a main component of pilot activities, but there is a good chance that new methods for education services (monitoring, coaching, digital teaching materials, etc.) will be explored by means of introducing online education and ICT that take into account regional trends.

2-7 Direction of International Research and Future Model Development

2-7-1 Trends in International Research on Learning Improvement Models

Impact assessments have spread widely since around 2010, and since then the results of assessments have been summarized through meta-analyses and systematic reviews, and elements and trends common to intervention programs that are effective in improving basic academic skills have become clear. In the review at the beginning of this survey research only individual success cases were introduced, but given the mounting global evidence related to the elements of effective interventions, international research programs have been launched in succession since around 2020 to support the development of specific models by making practical use of this knowledge in national program designs of different countries. This rapid increase in the number of international research studies with large-scale funding reflects a strong interest in highly versatile learning improvement models that are also cost-effective. In regard to the successful models identified in this survey research, TaRL, which was developed

by Indian NGO Pratham, has technical support from J-PAL, Innovation for Poverty Action (IPA), UNICEF and others, and the provision of large-scale funding from Co-impact and the Global Partnership for Education (GPE), and a rollout expansion strategy has been implemented for the model in the African region through TaRL-Africa. Structured Pedagogy is provided with funding mainly from RTI, a research institute under USAID, and funding from the Gates Foundation, and it is progressing with the implementation of scale-up studies[32] and creation of how-to guides[33] for policymakers and practitioners to implement the approach. Aid agencies in the United States and Europe that support the rollout of these models have strategically received funding with the cooperation of linked think tanks, NGOs, researchers and platforms to put into practice impact assessments, to further accumulate evidence and to simultaneously disseminate and expand intervention models. In addition, GEEAP's positioning of Structured Pedagogy and TaRL as effective interventions (Good Buys) that are recognized for evidence of cost effectiveness in its "Smart Buys" report[34] further strengthens assessments that both are versatile models.

2-7-2 Challenges and Future Perspectives

As has been revealed through the entire field survey, there is not necessarily an all-purpose intervention model for learning improvement, and if the content of published impacts are closely examined then it can be said that only a few examples are successful from the standpoint of sustainability, for example costs and scalability. Even if there are intervention components that have been demonstrated to be effective, knowledge on how to adapt models to make them conform with sustainable systems in each country has as yet not been adequately obtained, and organizations are moving forward with introducing and rolling out models in Africa through various trials[35]. This has a lot in common with the processes that this survey research is undergoing for Proof of Concept of community participation-based academic ability improvement models that are adaptable to local contexts while analyzing the effective elements of successful models. Verifications or pilot testing are needed to see whether various interventions on children's learning outcomes produce intended effects, meanwhile the international research mentioned above proactively calls for the sharing of results and experiences of empirical programs in all countries. Sharing the results and lessons of this survey research can be expected to contribute to international research. Since the above-mentioned

[32] Learning at Scale: https://www.rti.org/sites/default/files/learning_at_scale_concept_note_final.pdf

[33] The Science of Teaching is a practical guidebook based on evidence from existing research and based on the recommendations and lessons learned from programs implemented in developing countries, and which can be used by local policymakers and teachers. https://scienceofteaching.site/

[34] Banerjee et al.(2020).

[35]The importance of collecting empirical evidence in relation to implementation conditions in different countries and growing application of science was pointed out at the UKFIET's Smart Buy seminar (2021.6).

international research proactively calls for the sharing of experiences of empirical programs in all countries, sharing the results and lessons of this survey research can be expected to contribute to international research.

In addition, it is purported that while improving reading, writing and mathematics has been highlighted, the actual accumulated evidence is on improvements for reading ability, and there is not a mass body of evidence for rollout models in other fields[36]. JICA has a track record in supporting textbook revisions, self-study drills, and the development of teacher guidebook in the field of mathematics, and as its effectiveness has been demonstrated, it can be said that JICA has a comparative advantage in terms of content knowledge. While taking advantage of these JICA strengths, it is possible to consider an approach to accelerated global learning improvement model research.

[36]According to an interview (2020.12) with Dr. Piper and Dr. Stern on the Learning at Scale study, they noted that in this study, which began in 2018, there was also very little empirical evidence in the field of mathematics, and this made it slow going in selecting good practices and caused a substantial delay to the study.

Chapter 3 Formation and Verification of New Hypothesis Model

3-1 Role of Trial Model

During the first term contract implementation period of this survey research, investigations and analyses of evidence collection trends and successful programs were performed. The implementation of a collaborative trial of three separate approaches (Structured Pedagogy-TaRL-PMAQ) which were selected as successful models based on the results of these investigations and analyses was considered to have a high possibility of compensating for the weaknesses of each model, making the model more efficient and increasing its impact on improving learning. On the other hand, the results of the field survey indicated that the organizational structure in the education sector, quality of curriculum, teaching ability of teachers, linguistic and cultural background, status of community participation, intervention of other donors and other such circumstances differ in each country in Africa, and it is difficult to apply a uniform model. Therefore, during this survey research, trial models were customized according to the circumstances of each country while utilizing the features of the successful model, and the effectiveness was verified.

3-2 Verification and Analysis of Trial Integration Model

3-2-1 Integrating TaRL into PMAQ

One new hypothesis model of the "School for All" project is a collaborative model that has been tried and proven with great success by combining PMAQ, which was developed for the "School for All" project, with TaRL, an approach developed by Pratham which is an NGO in India. Two examples in Madagascar and Niger are described below.

(1) <u>Example of TaRL-Integrated PMAQ Model in Madagascar</u>

The TaRL-Integrated PMAQ Model in Madagascar consisted of extra-curricular time[37] that was planned in PMAQ which was used for extra-curricular remedial activities (hereinafter referred to as "remedial activities"), achieved by implementing for a total of approx. 100 hours with an average of 8 hours per week

Table 3-1: Integration Overview in Madagascar

Intervention Period	April – June 2019
Region	Analamanga Region
Number of Schools	1,650
Number of Target Students	172,000
Target School Years	2nd year to 5th year
Subject	Math
Remediation Time	Average 8 hrs./week
Cost per Student	0.15 US dollars

[37] Refer to "4.3 Learning Time (Supplementary) Mechanism Created by 'School for All' PMAQ"

with the TaRL technique. The details of activities are shown in the table.

Due to the fact that training of current teachers that is held for about 3 days twice a year where all teachers from each district gather together was used as an opportunity for training of teachers and community facilitators in the TaRL technique, the cost of model introduction was reduced to 0.15 US dollars per student[38].

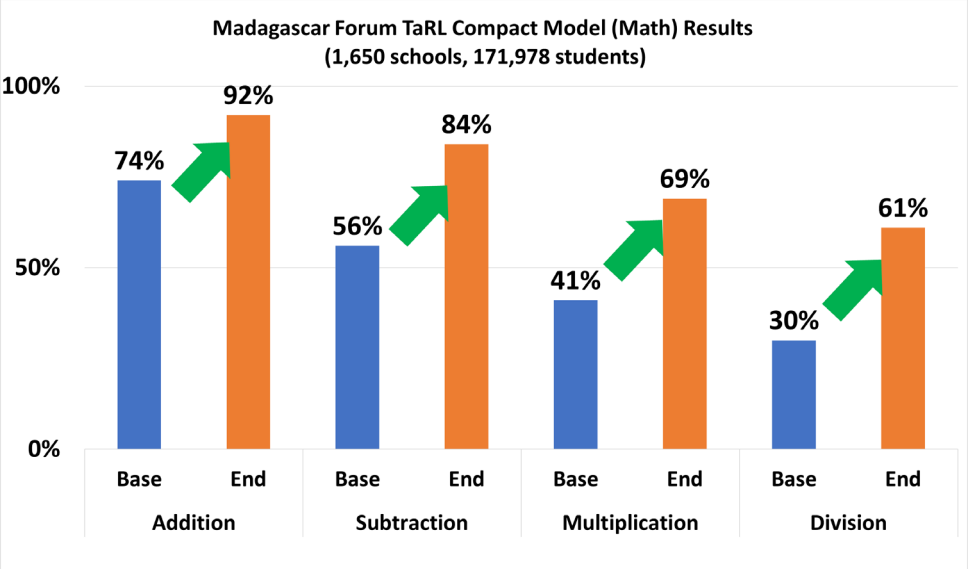


Figure 3-1: Change in Trial Model Academic Ability Test (Math) Correct Answer Rate in Madagascar

As shown in Figure 3-1, implementation of these remedial activities resulted in an average improvement in the correct answer rate of 18 points for addition, 28 points for subtraction, 28 points for multiplication and 31 points for division in the end-line survey compared to the baseline survey.

The effects of introducing TaRL in Madagascar consisted of guaranteeing the final individual learning time due to the creation of patterns by TaRL activities, guaranteeing the systematic nature of the learning content by the target learners, and the stringent selection of practice problems to prevent the burden on the facilitators for preparation and the burden on the learners from becoming excessive, having a favorable direct impact on improving the grades in the attainment target test. In addition, when TaRL was implemented, the activities were simplified without teaching materials / teaching tools / drills not being distributed, and a strategy was adopted of using the existing training system and federation system in each locale in order to heighten the rolling out potential. In terms of cost, teaching materials and tools that are

[38] The education forum technique was used for the roll out of this model. An education forum consists of a regional education development model that uses a school management committee federation network consisting of 30 – 50 school management committees combined into a group. Specifically, representatives of school management committee federation are gathered together at the provincial (or regional) level, and have a discussion with representatives of the education administrators and local governments on educational development themes that should be improved in that locale. Each related representative makes a commitment to implement solutions as far as they can. The federation representatives return home and hold general meetings, at which time they relay the decisions made at the forum to the representatives of each school who participate in the general meeting. The representatives of each school return to their schools and prepare an improvement plan on the theme determined at the forum, and hold a resident meeting to determine whether or not to implement the plan. If the agreement of the residents is obtained, a plan is prepared and implemented after a discussion is held.

expensive to produce were carefully selected in consideration of local circumstances, including the burden on facilitators and the complexity of training, such as the number cards that require a large preparation burden and complicated operation and implementation methods. This succeeded in creating a highly cost-effective model to improve learning ability (Refer to Attachment 3 for details).

(2) Example of TaRL-Integrated PMAQ Model in Niger

In the TaRL-Integrated PMAQ Model in Niger, regular lessons and remedial activities were implemented for 100 hours that consisted of TaRL reading/ writing and math lessons for 3 months for 600,000 elementary school students. The activities resulted in an average improvement of 16 points in children that could read from 48% to 64%, and average improvements of 19 points, 19 points, 19 points and 18 points for addition, subtraction, multiplication and division, respectively in the end-line survey compared to the baseline survey. Since TaRL training in Niger was directly implemented by the project for teachers and community facilitators, the cost per child for the introduction of these activities was higher compared to that in Madagascar.

Table 3-2: Linkage Overview in Niger

Intervention Period	Oct. – Dec. 2020
Region	Niamey / Tahoua Region
Number of Schools	3,700
Number of Target Students	600,000
Target School Years	2nd – 6th year elementary
Subjects	Reading/writing (French), Math
Remedial Activities	Regular lessons (Approx. 50 hr.) Remedial lessons (Approx. 50 hr.)
Cost per Student	2.53 US dollars

As is the case for Madagascar, teaching tools were not distributed in Niger. Information on the methods to prepare teaching tools was relayed through the school management committee federation to enable each school management committee to prepare the required teaching tools locally. In addition, there are not enough textbooks in Niger for each school for the number of students. Therefore, the quality of TaRL reading activities was boosted by distributing supplementary teaching materials for reading activities.

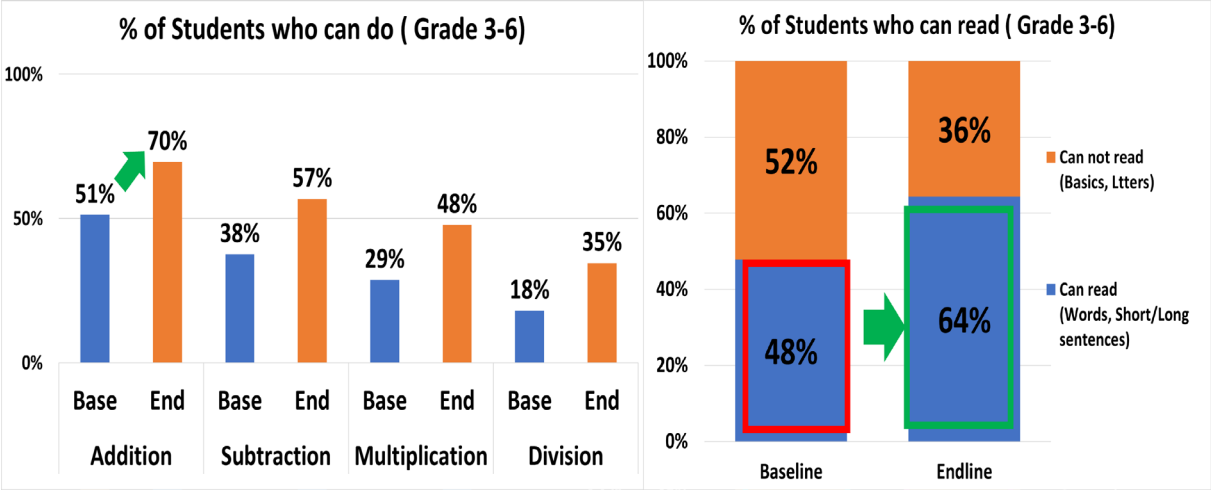


Figure 3-2: Change in Trial Model Academic Ability Test Correct Answer Rate in Niger

(1) <u>Success Factors for PMAQ and TaRL Linkage</u>

In addition to the above two examples, the TaRL-Integrated PMAQ Model has been implemented multiple times in Niger and Madagascar over a wide range, and has been found to be an extremely efficient model with substantive effects. The reasons that the TaRL-Integrated PMAQ Model succeeds will be explained with the characteristics of the TaRL approach and the PMAQ model.

TaRL is an approach that was designed for helping children who have been "left behind" to catch up by providing proficiency-based teaching. In this approach, children are grouped into classes according to their proficiency level by means of academic ability assessment, and teachers and local community volunteer facilitators who have been trained in proficiency-based teaching methods provide instruction in reading, writing, and math skills.

PMAQ is a model that aims to improve learning quality at minimum inputs. In this model, the results of the children's academic assessment are shared with residents, parents, and teachers to boost the motivation of teachers and local communities to participate in learning improvement activities, and to enable remedial activities under the guidance of teachers who participate as volunteers and volunteer facilitators who are selected from residents.

When summarized, since TaRL is a proficiency-based learning approach that is implemented during remediation time to enable children to catch up, there are cases in which it is difficult to implement in countries where remedial lessons cannot be conducted for a variety of reasons. On the other hand, PMAQ is a model that can guarantee remediation, required a learning approach that effectively uses the guaranteed time to remediation. In other words, the features of both

approaches have the potential to create synergy through cross subsidization.

3-2-2 Potential of Linking PMAQ and Structured Pedagogy

(1) Effects of Linkage

Structured Pedagogy which was identified as a successful model in this survey research uses knowledge concerning the content of teaching materials, teaching tools and other content to improve reading ability and on improvement of usage methods, and has produced significant results in improving the reading and writing ability of children in the lower grades. In order to achieve results, it was necessary, for example, to provide 100 hours of learning time for one subject consisting of 45- minute classes five days a week for 28 weeks in the Tusome project that rolled out the Structured Pedagogy Model in Kenya. However, in the African countries, it has not been possible to secure the lesson time in regular classes required to achieve results with Structured Pedagogy, making it difficult to achieve the expected learning outcomes[39].

On the other hand, as verified with the previous section, the advantage of PMAQ to improve learning consists of a large increase in learning time. The reason for this is remedial activities can be conducted for an extended period of time by motivated teachers who participate as volunteers and volunteer facilitators who are selected from residents through PMAQ-specific processes for activity planning and implementation that facilitate information sharing.

When the characteristics of the Structured Pedagogy and PMAQ model are considered, linkage of both models can be organized as described below according to the promotion status of Structured Pedagogy.

Possibility of Linkage Form of Structured Pedagogy and PMAQ

(1) When Structured Pedagogy Has Already Been In Place (e.g. Ghana)
In Ghana, Structured Pedagogy program has been implemented by USAID for reading/writing in English, with PMAQ implementation afterwards. In this case, teaching materials distributed with Structured Pedagogy are used during the remediation time created by PMAQ, which is thought to enhance the efficiency of remedial lessons.
The procedure consists of English language ability assessment of children that is first performed with PMAQ, stating at a resident meeting that there are many children who are lacking in English ability necessitating remedial English lessons, and creating an activity plan for remedial lessons conducted by volunteer teachers and resident facilitators. Children are grouped into classes according to their proficiency level, and remedial activities are conducted using the Structured Pedagogy teacher guidebook and textbook (In this case, necessary new inputs are only the costs for education forum to spread these activities, which are low).

(2) When Structured Pedagogy and PMAQ Are Rolled Out at Nearly Same Time (Madagascar)
Utilization of Structured Pedagogy in regular classes in Madagascar means that the

[39] There are survey results (PASEC 2015) that indicate only 50 – 60% of the prescribed number of classes per year are actually held in sub-Saharan Africa and French-speaking countries in Africa.

learning improvement model trialed by USAID is rolled out by the World Bank. The initial plan called for rollout of Structured Pedagogy at nearly the same time as the PMAQ and TaRL Models, but its roll-out was delayed due to the impact of the novel coronavirus pandemic and other factors. Currently, since PMAQ is in the lead, both models are not being implemented at the same school at the same time, but there is the potential in the future for both models to be implemented simultaneously depending upon the region, with Structured Pedagogy to be performed for regular classes of lower grades in elementary school and TaRL for remedial lessons. In this case, there is a high possibility that training in two teaching methods at the same time will cause confusion by teachers, making it necessary to clearly select teachers who receive training in both methods (teachers in charge of higher grades and teachers in charge of lower grades).
After Structured Pedagogy is rolled out nationwide, it should be possible to shift to remedial activities using the teacher guidebook and textbook distributed with Structured Pedagogy as in Ghana.

(3) When PMAQ is Rolled Out First, Followed by Structured Pedagogy (Niger)
In Niger, PMAQ has been approved by the Ministry of Education, and used in regular classes and remedial lessons. Furthermore, USAID has made the decision to implement a large-scale project in the education sector that include reading improvement for lower grades, and it is expected that Structured Pedagogy will be introduced in the future. In this case, it is important that Structured Pedagogy and PMAQ be clearly segregated at the planning stage, and that sharing of information proceeds from the initial stage to facilitate synergy of both models.

(2) PMAQ Linkage Case Study Using Structured Pedagogy Teaching Approach (Niger)

In Niger, the "Academic Ability Upgrading Program" (PMN: *Programme de mise à niveau*) to improve basic academic ability in regular classes during the three months in the first term with a focus on reading/writing and math skills was started in the 2018/19 school year with the initiative of the Minister of Education. During this survey research, how PMAQ and Structured Pedagogy should be linked at the secondary level to which PMN will be expanded in the future was considered. Specifically, a model was established that incorporated the Structured Pedagogy approach in remedial lessons created by PMAQ, and the effects in improving academic ability were verified. The objective of the program was to strengthen understanding and skills concerning "numbers and addition" among participating students, and intervention was performed for students who were evaluated as needing strengthening of academic ability from the results of the baseline test. When developing learning materials for math, paper- based materials were unified by using the (1) Explanation of solving method (I do), (2) Problems to confirm solving method (We do) and (3) Practice problems (You do) composition in order to facilitate the "Creation of classroom practices to ensure that every child learns" which is an effective element of Structured Pedagogy. Furthermore, using a script type teacher guidebook which was demonstrated to be highly effective in Structured Pedagogy research as reference, the instructions, questions and teacher activities required for class development were placed on the regular lesson pages, and examples of the main instructions and considerations for each practice problem were placed on the remedial lesson pages. A blackboard plan for regular classes was provided at the end of the guidebook in an effort to help teachers boost their learning skills.

The trial program that was implemented for seven days for 64 target students increased the understanding of addition with carry over and 3 digit + 3 digit addition by the remedial lesson students, and a significant improvement in the correct answer rate. This trial had the effect of boosting the basic math ability of remedial lesson students during a short period of time, and the teachers were able to implement the program without any large problems, indicating that this is one effectively learning technique that can be easily implemented in Niger (refer to Attachment 4 for details).

3-2-3 Further Potential of PMAQ

Regarding the mechanism to enable remedial activities, as stated above, the promotion of implementing home learning (homework) is currently being tested in a number of countries in Africa. These trials are being made to secure a portion of the remediation time by means of home learning in cases in which it is difficult to implement remedial lessons for an extended period due to various limitations[40] even if teachers and communities have strong intention to provide remediation to improve academic performance. PMAQ up until now has succeeded in reducing the distance between teachers, parents and communities through the sharing of information, and considerations to promote home learning have been made for quite a long period of time. However, it has not been implemented due to a number of factors, such as the high rate of illiteracy among parents in many countries in Africa, making it impossible for them to check homework done by their children, and the issue of who will check homework and the timing at which this is done. Therefore, during this survey research, a foundation model and learning improvement model in math that were used in the Malawi context between June 2021 and January 2022 were established, and the effect of intervention when remedial lessons and homework are combined was confirmed. At elementary schools in the capital region that were the target, there were (1) Five intervention group schools (foundation model introduced), (2) Five complex intervention group schools (foundation model + learning improvement model in math introduced) and (3) Five contrast group schools. Remedial activities were implemented that combined remedial lessons by teachers and homework assignments (approximately six easy practice problems on content studied that day) between September and November for the 6th grade elementary school children who had low test scores. The model that was implemented in a pilot manner is shown in the diagram below.

[40] There are various reasons for this, such as, the same teacher is teaching both sessions, there is no space for remedial lessons because there are too many students per classroom, or the remedial lesson has been built into the educational system as part of the curriculum, and additional time for remedial lessons is denied.

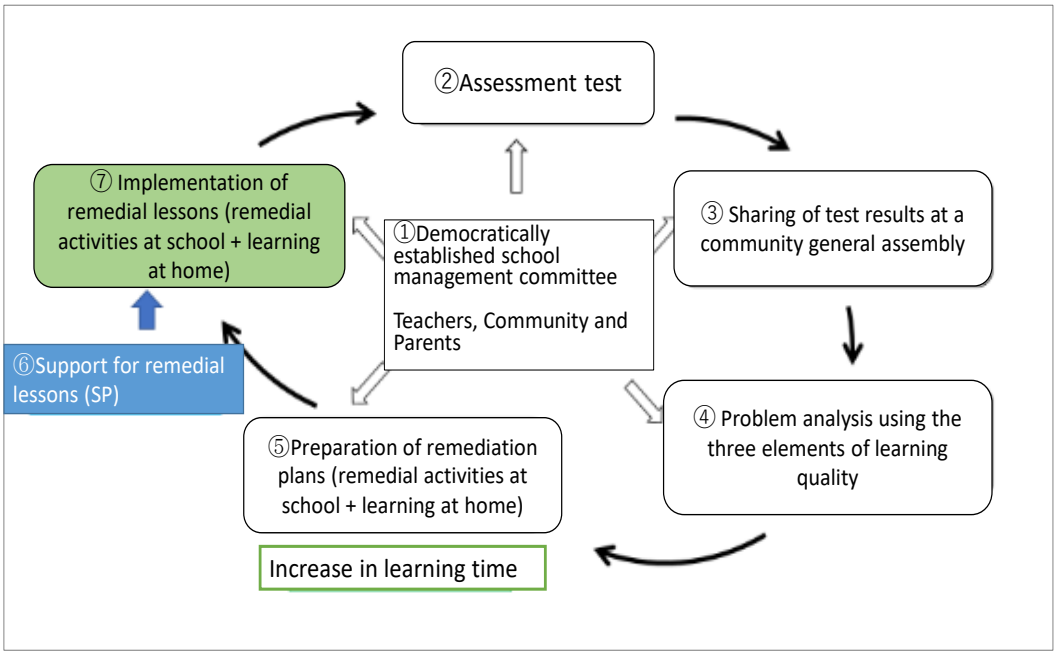


Figure 3-3: Further Potential of PMAQ

This model is positioned with the objective of enabling the content learned in the remedial lesson to be retained, and practice problems with the same pattern learned in the remedial lesson are implemented, rather than new content. Regarding the involvement of parents in the homework assignment which has been an issue, a high level of homework completion was obtained[41] by eliminating the necessity of support by the guardian for the homework by providing an appropriate teaching workbook, and introducing a method where the teacher corrects the homework during the remedial lesson. The results of comparison of the correct answer rate in the end-line test by the three intervention groups indicated that the children at the schools where the foundation model and learning improvement model in math were introduced [(2) Five complex intervention group schools] tended to have a higher correct answer rate than the children at the schools where the only the foundation model was introduced [(1) Five foundation model intervention group schools] and contrast group [(3) Five contrast group schools]. The fact that there are many students per school or many students per classroom is a large factor that inhibits improvement of low academic ability in Malawi, and direct actions to improve the learning environment, learning time and quality of teachers while taking these limitations into consideration consist of the factors that will enable these actions to succeed. In particular, during this trial, a total of three hours of remedial activities were implemented per week based on the prepared action plan, and participation / checking by the parents related to

[41] Remedial activities attendance was 70% at schools where learning improvement model in math was introduced, and homework completion rate was 77% (Data collection succeeded at four out of five schools).

the implementation of homework was obtained on a regular basis, illustrating the potential of the approach to effectively increase learning time inside and outside of schools. (Refer to Attachment 5 for details)

3-3 Lessons from Verification of Trial Model

A list of the trials implemented under this survey research is shown in Table 3-3. The two examples of the TaRL-Integrated PMAQ Model considered in this item indicate the high potential to increase the scale of the model in order to efficiently boost the reading/writing / math ability of children. It is expected that implementation of the integration model will be promoted in the future in countries where the PMAQ (foundation model) has already been in place. In addition, since synergy can be expected regarding linkage with Structured Pedagogy, efforts should be made to proactively promote PMAQ in countries where the Structured Pedagogy model has already been implemented by USAID or another organization in order to obtain synergy.

Table 3-3: List of Trial Models

	(1) TaRL-Integrated PMAQ		(2) Potential of PMAQ-Structured Pedagogy Linkage	
Trial Phase	Trial ⇒ Practical phase	Trial ⇒ Practical ⇒ Rollout phase	Initial trial phase	Initial trial phase
Target Country	Niger	Madagascar	Niger	Malawi
Features	Achieves significant increase in learning time with regular classes and remedial lessons, enabling children at each skill level to catch up in a short period of time.	Remediation time is increased by participation of residents, and rapid technique rollout can be achieved at low cost by using existing teacher training system.	Teaching method incorporating elements of ESMATE/Structured Pedagogy was introduced with remedial activities, improving understanding and skills in elementary school math in short period of time.	Short-term catch-up intervention for children unable to do four arithmetic operations. Has potential to function as ESMATE/Structured Pedagogy type learning improvement technique for large number of students.
Target	3rd – 6th graders	2nd – 5th graders	1st year lower secondary school students	6th graders
Target Schools (No. of Students)	6,974 schools (approx. 1 million students)	1,650 schools (170,000 students)	Remedial lesson target: 64 students	5 schools (selected from 10 pilot schools)
Subject	Reading/writing (French), math	Math	Math	Math
Period	Oct. – Dec. 2020	Apr. – June 2019	Mar. – Apr. 2021	Sep. – Nov. 2021
Intervention	• Assessment (ASER type) • Guide for teachers/facilitators • Facilitator training • Supplementary materials for reading comprehension • Remedial lesson implementation	• Foundation model + school management committee federation + pledge at forum • Assessment (ASER type) • Teacher/facilitator training in TaRL technique • Remedial lesson implementation • Monitoring & follow up	• Academic ability test (selection) • Student write-in math materials (covering content in regular classes and remedial lessons) • Guidebook for teachers/facilitators compliant with teaching materials • Teacher/facilitator training	• Academic ability test (selection) • Instructor training, teacher training • Textbook (1 per student) • Teacher/facilitator guidebook • Homework workbook (1 per student)
Effect	Improvement confirmed after both reading/math intervention	Significant improvement in correct answer rate for addition, subtraction, multiplication and division	Improved grades of remedial lesson students in short period of time, and could be implemented/taught by local facilitators without big problems	Many children unable to calculate got ability to do column calculations with carrying over and borrowing and division, and correct answer rate in test improved.
Remediation Time	Regular class (Approx. 50 hr.) Remedial activities (Approx. 50 hr.)	Average of 8 hours/week (Total: 100 hours)	Regular class + Remedial activities for 7 days (Total: 28 hours)	Remedial lessons at school: Average 3 hr./week (Total: 18 hr.) + Homework (About 6 practice problems in each time)

Chapter 4 Feasibility Survey for Introduction of Community Participatory Educational Development Model

4-1 Overview of Introduction Feasibility Survey

This section summarizes the feasibility survey for the introduction of the community participatory educational development approach in Africa and the overall considerations.

Table 4-1: List of Countries in which Feasibility Survey for Introduction of Community Participatory Educational Development Model was Implemented

Target Country	Field Survey Period	Survey Methodology and Results
Burkina Faso	April 2019	・ Literature survey ・Interviews of JICA Burkina Faso office, Ministry of National Education, Literacy and Promotion of National Languages, elementary school board of education members and representatives of parents' associations Outcome: Foundation model introduced, considering reintroduction.
South Sudan	September 2019	・ Literature survey ・Interviews of JICA South Sudan office, Ministry of Culture, Youth and Sports, Ministry of General Education and Instruction, representatives of parent-teacher associations (elementary/lower secondary schools), other aid organizations (UNICEF) Outcome: Confirmed the possibility of revitalizing PTAs/ school management committees during school visits.
Ethiopia	Field survey cancelled[42] Information collected through literature survey	・ Literature survey (SIP related documents collected / analyzed) Outcome: SIP policy has been introduced, and there are challenges with implementation system and support. Confirmed JICA experience may help solve these challenges.
Malawi	June – July 2021	・ Literature survey ・ Interviews of Ministry of Education, regional education offices, elementary school teachers and other aid organizations (World Bank) Outcome: Implemented trial model pilot activities in order to facilitate SBM functioning and solve educational challenges.
Benin	December 2021	・ Literature survey ・ Interviews of Ministry of Education, regional education offices, elementary schools, holding of simple academic ability test Outcome: Investigation into the possibility of intervention in the areas of school management improvement, academic achievement and girl's education.
Djibouti	Field survey cancelled [43] Information collected through literature	・ Literature survey, Reading program funded by USAID online interviews. Outcome: SMC activities implemented at 8 pilot schools in 2018/19. Investigation into full-fledged nationwide

[42] Planned field survey cancelled at last minute due to emergency measures to prevent the spread of novel coronavirus. Survey changed to literature survey.
[43] Planned field survey cancelled at last minute due to emergency measures to prevent the spread of novel coronavirus. Used online survey records and results of 2018 field survey.

	survey	introduction.

4-2 Current Status and Future Challenges for Community Participatory School Management

A survey of the framework and current functioning of community participatory school management was conducted in the above six countries as an integral part of the feasibility survey for the introduction of the model. The current status and future challenges for school management that were clarified by the survey are described below.

1) Burkina Faso

After a trial of the community participatory school management improvement model was started in Burkina Faso through small-scale pilot activities with the cooperation of JICA in 2008, model rollout has been completed at 12,000 or more elementary schools nationwide through a technical cooperation project implemented in two phases from 2009 to 2017. This is the third country this accomplishment has been achieved, after Niger and Senegal, and should be highly acclaimed.

On the other hand, when the functioning of the school management model after nationwide rollout by means of JICA cooperation was verified with statistics from the Ministry of National Education (MENAPLN) and field surveys, it was found that there are quite a few issues of concern. For example, it was confirmed that there is stagnation in the reelection of school management committee (SMC or COGES: *Comités de Gestion des Etablissements Scolaires*) members, that the frequency of resident meetings held by SMCs is insufficient and submission of annual activity summary tables is low, and low mobilization of resources for action plan implementation, indicating that SMCs are not adequately functioning. In addition, the trial model for the Commune COGES Contact Council (CCC) which is expected to share experiences between different COGES/SMCs and function to build bridges with regional administrations is not adequately functioning when judging from the rate at which regular general meetings are held and the participation rate in general meetings. Therefore, revitalization of SMCs and stimulation of the establishment of SMC Federation are needed.

2) South Sudan

In the same manner as in many other countries in Africa, in South Sudan, institutional regulations stipulate that elementary schools should be managed through the cooperation of the principal, parent and teacher association (PTA) and the school management committee (SMC). However, according to involved persons at the Ministry of Education, although PTAs and school management committees generally exist on paper, there are many organizations that do not function. There are a number of reasons for this, and there have been reports that no training opportunities for members of these organizations are provided, the involved persons do not understand their role or responsibilities, resulting in the expected role not being fulfilled.

In spite of this, at the schools which were visited during the field survey, it was found that there were principals and representatives of parents with a high level of capability and awareness, as well as multiple PTAs that are actively functioning, based on good communication between involved persons. At these schools, PTA general meetings are regularly held, donations are being received from a majority of parents, and activities are being

implemented based on a previously prepared annual action plan. When the current status in other African countries is taken into consideration, it is imagined that the view of the Ministry of Education officials that “Many PTAs and school management committees are not functioning” is closer to the general reality in South Sudan, but there is adequate potential that PTAs and school management committees can be revitalized depending upon the level of intervention, as seem from the PTAs that were encountered during the field survey.

3) Ethiopia

As for Ethiopia, there was the possibility that there was no room for intervention because of the elaboration of systems related to so-called school-based management under a framework called the School Improvement Program (SIP). However, as the survey proceeded, a number of challenges were identified for which solutions can be presented that utilize the experience of JICA in other countries, such as the complexity of action plans / evaluation frameworks that vary from school to school, absence of specific measures that will lead to improvement of learning outcomes, mechanisms that are unlikely to encourage organized and substantive participation of local communities in school management, and a poor advice / support system for principals and school improvement committees (SIC). On the other hand, from the experience gained in other JICA cooperation projects implemented in the past, including the community participatory school construction projects, it is clear that there is adequate potential for community participation in school management improvement.

4) Malawi

Primary education was made free in Malawi in 1994 based on a decision by the 1990 Education for All Council, significantly improving the enrollment rate, but there are still major problems in the internal efficiency of education, with nearly 30% of students in all school years needing to repeat the same year. In addition, the survey results by The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SEACMEQ - previously SACMEQ) in recent years (2015 to 2019) concerning the quality of education indicate that the situation is very serious, with the country ranking the lowest for reading and second from the lowest for math out of the 10 countries surveyed, and the results of the EGRA reading assessment tool are also extremely low. On the other hand, school management committees (SMC) have been established at all schools, but there is not a manual for the standardization of SMCs, and the level of functioning of each SMC differs due to a variety of factors. School management committees, school donations and School Based Management (SBM) are being implemented in Malawi in accordance with the context of decentralization. The problems in this country are fundamentally similar to countries where ‘School for All’ intervention has been performed and resulted in success, leading to the judgment that there is extremely high potential for the ‘School for All’ approach to solve the problems that are being confronted.

5) Djibouti

Since the field survey that was planned for 2021 was cancelled due to the impact of the novel coronavirus pandemic, the results of the survey implemented in December 2018 just before the start of this survey research and the results of the online survey conducted as part of collecting information in January and July 2021 on the USAID academic ability improvement project are described.

In the field survey that was conducted in 2018, the educational policies from the administrative vice-minister of the Ministry of Education, necessity of community participation to improve school management and the environment from the principals of elementary and lower secondary schools, and the high expectations for the school management committee functionalization model in the JICA 'School for All' project in order to facilitate the success of "school projects", including donations from aid organizations such as the World Bank, were expressed. On the other hand, the results of interviews at the time indicate there is a large communication gap between the principal, teachers, parents and residents, and this is inhibiting school management and an improvement in learning. The 'School for All' model that promotes school management was developed in order to bridge this communication gap by promoting the sharing of information between stakeholders, and it was found that there is high potential for this model to achieve significant results in Djibouti, with the model functioning and responding to the expectations of many stakeholders involved. Furthermore, improving the quality of learning is a field for which the introduction of this model can be expected to make improvements. In the survey results from 2018, it was found that there are significant challenges in the basic academic ability of children in spite of the fact that the elements of learning environment, teachers and textbooks that have an impact on learning are being provided at elementary schools in Djibouti. The remaining important elements that are needed to improve the quality of learning consists of increasing homework and learning time, but improvements cannot be made in these areas without the cooperation of parents and residents. The school management committee is the organization that is between the residents and schools which is capable of enabling cooperation of the parents and residents, clarifying in this situation again the need to promote the rollout of this model. The number of elementary schools in Djibouti that are the target of rollout is relatively small at approximately 160 schools, and it is important that rollout of the school management committee functionalization model be speedily performed in a flexible and appropriate manner, taking into consideration the fact that the budgets for rollout are limited.

Activities conducted during the implementation of this survey research consisted of the collection of information on the Djibouti Early Grade Reading Activity **(**DEGRA**),** an academic ability improvement program conducted by FHI360 with the supports of USAID funds, and the implementation of an online exchange of opinions with FHI360 which is the implementing agency. DEGRA is planning to deploy nationwide a learning improvement program for reading by 1st year to 5th year elementary school students that includes teacher training, teaching material development and activities that mobilize communities. If JICA introduces an education improvement model in this country in the future, there is a high possibility that the target schools may be duplicated, and it was confirmed that information will continue to be shared, including the possibility of future cooperation.

6) Benin

The policy to make primary education completely free in Benin that was implemented in 2006 has brought about significant progress in improving access. However, the increase in the school enrollment population had led to a shortage of regular teachers and poor learning environment, and is a factor in such issues as a low quality of education and low elementary school graduation rate. In the basic academic ability survey in the EFA Global Monitoring Report 2013/2014 (GMR) of UNESCO, Benin is ranked fourth from the bottom in countries south of the Sahara, and 70% of school age children cannot read or write. In addition, according

to the Programme for the Analysis of Education Systems of CONFEMEN (hereinafter referred to as “PASEC”) (2019), an international academic ability test that was conducted recently, the percentage of children in Benin who have basic adequate ability when they graduate from elementary school (6th graders) is 75% for French and 51% for math. This indicates that this is a very serious issue, with approximately half of elementary school students not satisfying the standard for math. On the other hand, parent associations (PTA) have been established at all elementary schools in Benin as organizations to promote the participation of parents to facilitate learning and attendance by children, but ever since the policy by the government of free primary education was introduced, participation of parents in school management and learning improvement by children has decreased. In addition, in the field of promoting school enrollment, the fact that the PTA does not have a mechanism to promote community participation is a large handicap, resulting in it not being able to adequately fulfill its role.

In order to address this situation, the ‘School for All’ project academic ability improvement model which has achieved significant results in improving learning by stimulation of SMCs and PTAs through the promotion of the information sharing between actors and the cooperation between actors, and it was found that there is high potential in Benin to achieve significant results in the fields of school management, quality of learning and girls' schooling.

4-3 Learning Time (Remediation) Mechanism Created by ‘School for All' PMAQ

The foundation model of "School for All" creates a "community collaborative educational development cycle" that leads to school improvement activities by generating behavioral change and collaboration among school personnel through information sharing and discussion. This mechanism is also inherited by PMAQ, which aims to improve the quality of learning. PMAQ is a model in which teachers, local residents, parents and other school related actors share the results on assessment of the academic ability of children, analyze the problems to identify the causes of low learning quality, such as inadequate learning time, poor learning environment, deficient teaching materials and low quality of teachers, and in turn plan and implement remedial lessons, supplementary materials and learning support as solutions that can be implemented by the respective parties. The implementation of solutions will result in an increase in learning time by children, the provision of supplementary materials and learning support, which will improve the reading/writing and math ability of children. The activity process by school management committees to improve learning is comprised of seven stages (PMAQ (minimum package for quality learning) Result Realization Process). (1) A school management committee that is established by democratic election is responsible for (2) Assessment of reading/writing / math ability of children conducted by teachers. As a result, (3) It is clarified that a majority of children have a problem learning reading / writing and math. The school management committee summarizes the results of assessment, and shares information with parents, local residents and teachers at resident meetings, fostering a common recognition of improving learning by children among participants in the resident meeting. (4) Through this common recognition, (5) Remedial activities selected from the standpoints of learning time, learning environment / teaching materials and quality of learning are planned by the teachers and local residents, and (6) Training of teachers etc. is performed to boost the quality of remedial activities, and the (7) Remedial activities are implemented. The academic ability of children is improved through this process.

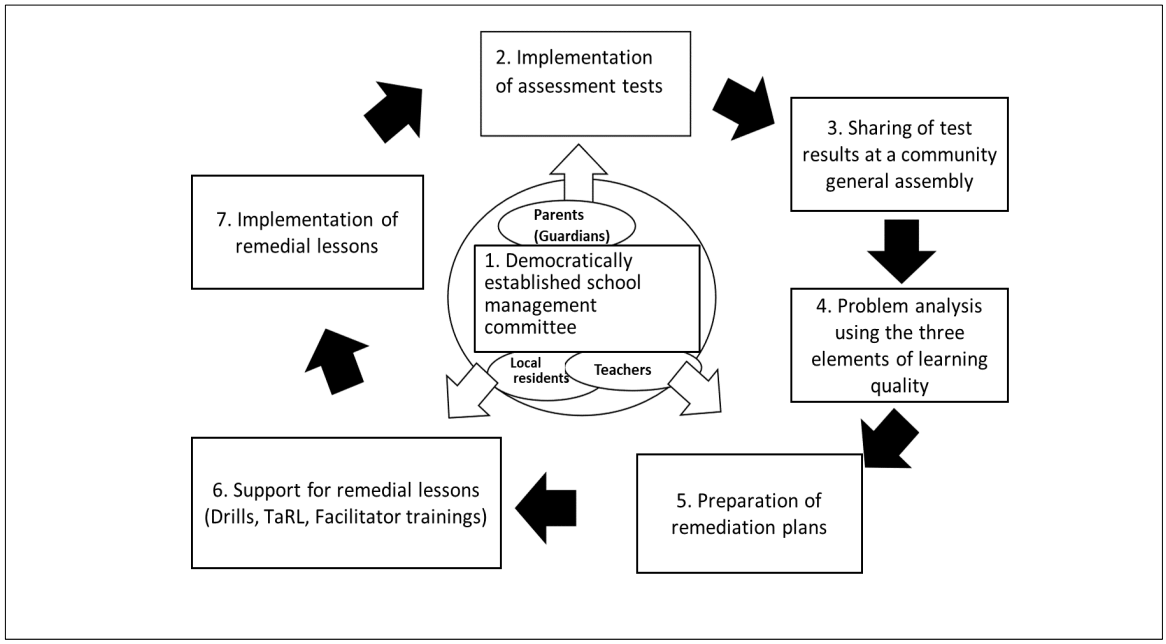


Figure 4-1: PMAQ Result Realization Process

The common factor in the various trials that have been implemented to date through this result realization process is the implementation of remedial lessons for an extended period of time by teachers and community facilitators, with the length of time being 100 – 200 hours. The self-learning math drills, facilitation and other learning support which was implemented during the increased learning time created by these remedial activities had a high impact[44].

4-4 Potential of Introducing Community participatory School Management Model

In the 'School for All' approach, a so-called "problem-solving model" is introduced according to the context of each country as a means to address educational challenges that are caused by a variety of factors and in turn make improvements by implementing a combination of solutions that can be achieved with the cooperation of residents, parents, teachers and other schools related actors, and results have been achieved steadily. The issues or challenges described above for the six countries are not unique to a specific country, and have been widely observed in various regions of Africa, including countries which have been the target of 'School for All' project to date. From this perspective, it can be fully expected that it is possible that the

[44] According to the impact assessment results, at the group of schools in Niger which received intervention consisting of a combination of the PMAQ school management component and school donations, learning time increased by 33% at schools which held remedial lessons after school, and by 43% at schools which held remedial lessons at night (Kozuka 2018). At the group of schools (70 schools) which received PMAQ intervention in Madagascar, reading/writing and math remedial activities were planned/implemented for the target school years (elementary 3rd – 5th graders) at all schools (Maruyama, Igei and Kurokawa 2021). PMAQ was introduced in the Analamanga region in Madagascar, and remedial activities of an average of 92 hours were implemented at 1,541 schools out of 1,649 schools in that region in the 2017-18 school year (JICA 2020).

‘School for All’ approach can solve the various educational challenges in the target countries described in this chapter. In particular, huge resources will be needed to solve the learning crises in Africa and other educational challenges, but it is not easy to secure these resources, and it is projected that the need and demand for the ‘School for All’ problem solving model which maximizes existing resources will increase.

Chapter 5 Research Summary and Recommendations

At the beginning, this report describes that the World Bank, in its World Development Report (2018), used the term “learning crisis” for the first time to stress the need to improve learning as an urgent issue that the international community should address. However, in developing countries, learning crises existed long before this alarm was sounded. USAID and Pratham, who respectively developed the Structured Pedagogy and TaRL programs specified in Chapter 2 of this report as approaches for coping with learning crises, also each developed and widely implemented the assessment tools EGRA/EGMA and ASER in the early 2000s to raise awareness of the problem of low academic achievement in developing countries, and have worked from an early stage to develop methods (models) to improve the situation with repeated trials. This has led to the development of models that can improve academic abilities with minimal input, even in conditions where the quality of learning is difficult to secure. Similarly, in the case of the PMAQ, which was identified as a successful model in this research survey, the ‘School for All’ project, which created the model, conducted a basic math test for all the children in the target schools from an early stage to understand their low academic abilities, and then developed the PMAQ model to improve children’s math skills through a bottom-up approach.

Out of these models, Structured Pedagogy and TaRL are in particular, with donors and research institutions being at the core of each of them leading up to 2030, thought to accelerate the trend towards mainstreaming as a solution strategy for the learning crisis, or high learning poverty rate. These two models are excellent ones that have effectiveness which has been proven by evidence, but critical shortages of learning time (class time, learning time at home) that are endemic in Sub-Saharan African countries are likely to be obstacles to achieving results. Therefore, as described in Chapter 2, PMAQ has a highly universal function of “raising the motivation of teachers and local residents in participating in learning improvement activities and enabling remedial activities under the guidance of teachers who participate as volunteers and volunteer facilitators who are selected from residents, based on the results of student academic assessments shared among local residents, parents, and teachers during the process of activity planning.” This function solves the problem of insufficient learning time under both models, and it is an essential element for overcoming the learning crisis. As shown in Chapter 3, PMAQ and TaRL linkage has already demonstrated learning improvements, and synergies with the Structured Pedagogy model can also be expected.

In the future, as a countermeasure against the African learning crisis, a great contribution for many children who are unable to learn due to the learning crisis will likely be active cooperation with both approaches (Structured Pedagogy and TaRL) in countries where the ‘School for All’

project is already in place, and introducing and rolling out ‘School for All PMAQ’ in countries where Structured Pedagogy and TaRL are already being used in order to create a synergy effect with these two models.

Attachments

Attachment 1: Survey Records

Participation in field surveys, interviews, and seminars

【Successful Model Field Survey】

Target country	Implementation period	Details
Ghana	March 20-29, 2019	Field survey (TaRL/STARS)
India	May 6-10, 2019	Field survey (Mindspark)
India	May 6-10, 2019	Field survey (Learning camp, TaRL)
Ghana	June 17-21, 2019	Field survey (ENEZA,etc.)
Sri Lanka	July 22-27, 2019	Field survey (Surala Ninja)
Madagascar	July 22 to August 5, 2019	Field survey (MMT, PMAQ)
Zambia	July 3-9, 2019	Field survey (Catch-up)
Kenya	May 21, 2020 (online)	Online survey (PRIMER/Tusome)

【Information Sharing Session with Implementation Agencies】

Subject institutions	Implementation period	Details
Education Initiative	April 17, 2019	Investigation into successful models (Mindspark, CAL)
RTI International	December 7, 2020	International study research (Learning at Scale) and JICA academic ability improvement model information sharing
FHI-360	January 20, 2021	Investigation into successful models (Structured Pedagogy)
FHI-360	July 6, 2021	Djibouti Program Information Sharing

【Feasibility Study】

Target country	Implementation period	Details
Burkina Faso	April 8-11, 2019	Interviews with Ministry of Education, school officials, and other agencies.
South Sudan	August 31 to September 6, 2019	Interviews with Ministry of Education, school officials, and other agencies.
Malawi	June 11 to July 13, 2021	Interviews with Ministry of Education, school officials, and other agencies.
Benin	December 3-15, 2021	Interviews with Ministry of Education,

		school officials, and other agencies.
Ethiopia	Field survey canceled	Literature survey
Djibouti	Field survey canceled	Literature survey, Online survey

【Participation in Training Courses, Seminars and Workshops】

Host organization	Implementation period	Details
TaRL-Africa	September 4-9, 2019	TaRL Africa Community Workshop 2019 (Botswana)
TaRL-Africa	March 13, 2020	"Mathematics Education in Africa - Challenges and Solutions"
Innovation for Poverty Action (IPA)	June 2, 2020	"From Research to Policy in School Management and Accountability"
TaRL-Africa	June 29, 2020	"Engaging Parents and Communities"
TaRL-Africa	July 29, 2020	"Accelerating Learning When Schools Resume"
TaRL-Africa	October 29, 2020	"Focusing on Foundations Virtual Workshop"
The Education and Development Forum (UKFIET)	June 21, 2021	"Global Education 'Smart Buys': Debating the Evidence"
Center for Global Development（CGD）	November 23, 2021	"Improving Learning at Scale: Evidence from Large Scale Successful Education Programs"

【Trial Model Pilot Activities】

Target country	Implementation period	Details
Niger	January to April 2021	Development of teaching materials, baseline tests, trial implementation and results analysis
Malawi	June 2021 to December 2021	Basic model introduction, mathematical ability improvement model introduction, training, baseline tests, trial, end-line testing, and results analysis

Attachment 2: Overview of the Successful models

Overview of the Successful models

Successful model 1: Community Participation in Basic Education Improvement (School for All Model)

(1) Development History of the Model

Through the first and second phases of a technical cooperation project in Niger called the "Project on Support to the Improvement of School Management through Community Participation" (hereinafter referred to as the "School for All Project"), there has been success in the development, introduction and dissemination of a "School Management Committees Activation Model" through community participation (foundation model), which has greatly contributed to improving access to education in Niger. At the same time, in response to the growing problems of learning quality, various efforts have been made to increase learning hours under the above-mentioned community participation approach. Based on the results and challenges of these trials, the School for All Project, which started in 2012, has seen efforts to develop a model for a community-based educational development. One initiative has been the development of a community-based learning improvement model "Paquet Minimum Axé sur la Qualité" (minimum package for quality learning or PMAQ) focused on improving the basic academic abilities (such as reading, writing and mathematics) of children.

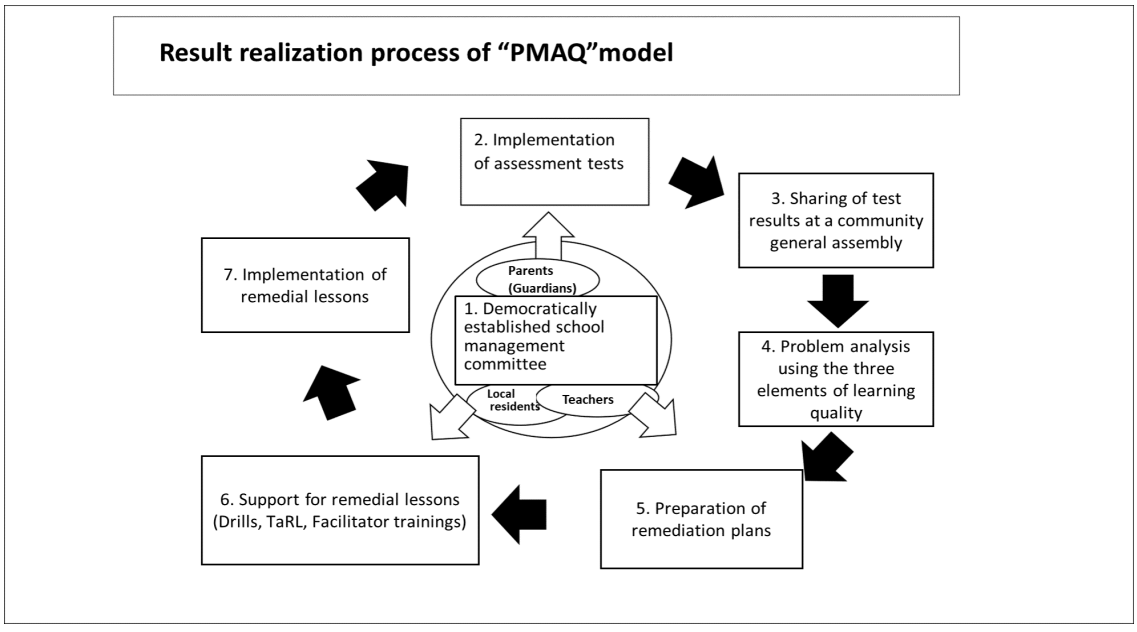
The "School Management Committees Activation Model" through community participation (foundation model), first developed by the School for All Project, has identified the causes of school management committee non-functionality as being inadequate leadership and information sharing among actors, and a lack of external support. Solutions include the democratic establishment of school management committees, the introduction of action plans to promote information sharing and cooperation among actors, and the establishment of school management committee monitoring systems.

Out of these solutions, action plans to promote information sharing and cooperation among actors has especially produced activities that lead to direct solutions through collaboration among people on various challenges using shared information. In particular, PMAQ has led to activities for the improvement of academic abilities.

The PMAQ model which started in Niger is now being piloted in countries such as Madagascar, Senegal, and Mali with JICA support.

(2) PMAQ Approach

PMAQ is an approach in which school-related actors such as teachers, local residents, and parents, etc., share the results of children's academic achievement assessments, identify, as a result of analyzing problems, the causes for low quality of learning, such as inadequate learning time, very poor learning environments, insufficient learning materials, and low quality teaching, and plan and put into practice, as solutions which they can implement themselves, extracurricular lessons, supplementary teaching materials production and learning support. As a result of implementing solutions, the learning time of children increases, and their literacy and numeracy is improved through supplementary teaching materials and learning support. The activity process of school management committees toward improving children's academic ability consists of the following 7 stages (PMAQ (minimum package for quality learning) result realization process). (1) Under school management committees established through a democratic election, (2) teachers assess the reading, writing and numeracy skills of children. (3) As a result, it becomes clear that there is a problem in the learning of reading, writing and mathematics for most children. The school management committee summarizes these assessment results and appropriately shares this with parents and local residents, and teachers at community meetings, and this engenders a common recognition toward the improving the academic abilities of children among the meeting participants. (4)All stakeholders, through this common recognition, analyze the issues from the viewpoints of learning time, the learning environment and teaching materials, and quality of teaching and learning. (5) Remedial activities are planned by the teachers and local residents (6) they carry out training for teachers in order to enhance the quality of remedial activities, and (7) implement activities. The academic abilities of children can be improved through these processes.



Through the various trials that have gone through this result realization process up until now, the common practice has been for teachers and community facilitators to give remedial lessons over long hours that range from 100 to 200 hours. With the increased learning time that comes about due to remedial lessons, its high impact can be linked to the implementation of learning support, such as self-study math drills and facilitation, etc.

(3) Impact on Learning

The results of a 2014/2015 trial of the PMAQ model in Niger, with approximately 6,000 students from 41 schools doing activities using a math drill book for four to five months, showed an increase in the correct answer rate by an average of 40 points for all grades in math practice tests. In particular, average scores improved by close to two to three times in lower grades. This drastic improvement was supported by ensuring learning time for doing math drills which reached an average of 250 hours per school. After that, when the model was deployed to around 300,000 1st to 4th graders at 3,500 schools in Niger in 2018, the correct answer rate for mathematics problems increased by more than 30 points over the two to three months it was in place. In this way, even after the wider dissemination, improvement results similar to results from small-scale practice tests were achieved, and its effectiveness as a model to be rolled out was proven. Moreover, even the results of precisely measured impact assessments of this project's intervention effectiveness in the Tillabéri Region demonstrated the high learning effectiveness of the PMAQ approach and content, for example a significant statistical difference has been observed with the average end-line results of the intervention group (4th graders at baseline) who did mathematics drills having significantly higher average scores (standard deviation 0.36 to 0.38) compared to children who didn't do the drills.[1] In particular, the large impact on children with low baseline test scores suggests that PMAQ effectively intervenes within a short time in the catch-up of basic academic skills for children who have been left behind in school classes.

Successful model 2: Teaching at the Right Level (TaRL)

(1) Development History of the Model

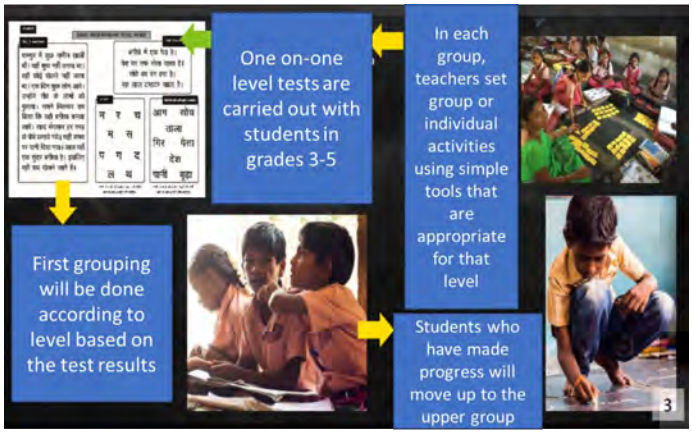
The Pratham Education Foundation (hereinafter referred to as "Pratham"), an Indian NGO established in the 1980s, developed Teaching at the Right Level (TaRL), a speed learning method for improving reading, writing and numeracy skills according to proficiency level, in the early 2000s through repeated trials with the goal of giving every child basic academic abilities, especially reading, writing and numeracy skills.

[1] Maruyama, T. & T. Kurosaki. (2020).

TaRL is at its most effective with the program “Learning Camps”, a short-term intensive model (direct type) run directly for 40 days by Pratham personnel. Based on the results of the Annual Status of Education Report (ASER), an assessment that can be conducted with simple training, this model aims to improve academic levels in a short period of time (30-60 days) by grouping children according to their level of proficiency, rather than age or grade, and having facilitators provide interactive activities tailored to each child's level of proficiency. Every ten days, as well as before and after the start of activities, a simple assessment is carried out, and children can move to a class that is suitable for their own academic ability according to their learning proficiency level. This model was extremely effective, but the cost of scaling up and the personnel needed for implementation became a problem, and so it shifted to the government model (indirect). The government model is one in which a government administrator is trained as a lecturer in accordance with the national education system, and teachers are taught by this lecturer, and TaRL is implemented. At first, there was a challenge in that it was not efficient and the effect was low in comparison to Learning Camps, but this has gradually solved, and an effect which is equivalent to Learning Camps model was achieved and this model became the main scaled up version of TaRL. This model is used when TaRL is introduced outside of India.

(2) TaRL Approach

Basically, TaRL is an approach that was developed to catch up on reading, writing and mathematics. It consists of class classification according to proficiency level by means of a simple language assessment tool and efficient short-term intensive learning that matches the proficiency level. The TaRL learning cycle is as shown in the figure below, starting with (1) measurement of children’s academic abilities in reading, writing and mathematics using a simple assessment tool, (2) class allocation based on the results of assessment, (3) efficient learning by combining various tools and techniques with small group, pair and individual learning plans (about 90 minutes × 10 days × 4 times), (4) and regular assessment (every 10 days or so) and the reallocation of classes based on assessment results.



(3) Impact on Learning

A feature of TaRL is that it has the greatest impact on grade re-evaluation by implementing learning activities and teaching materials that match the learning level of the child. According to the findings of six impact assessments carried out in seven Indian states, Pratham's TaRL approach has improved children's test scores by 0.07 to 0.7 SD, and it has been successful in getting hundreds of thousands of children who could not read, write or do mathematics to the level where they could. It has been demonstrated that TaRL is effective both in a remedial lesson programs (direct type) led by volunteer facilitators and in government programs (indirect type) with set teaching time devoted to TaRL instruction given by regular teachers. In particular, while the government model is inferior to the direct type for learning improvement effectiveness, it has been shown to be a feasible and highly versatile method that can produce positive results in learning results through continuous monitoring by governmental supervisors of teachers and mentorship support within the formal education system[2].

Successful model 3: Structured Pedagogy

(1) Development History of the Model

It is an educational method that adopts a structured curriculum and puts into practice explicit instruction and training, and it is a centuries-old educational approach which by no means is a new concept.[3] Methods of education are greatly influenced by historical and social conditions. In particular, the standardization of educational methods accelerated with the expansion of public education in the United States, and the No Child Left Behind Act (2002) was enacted in the United States in the early 2000s. At the same time, standardization and structuring of education were adopted as national strengthening strategies in the United Kingdom and Australia, which became the origin of the Structured Pedagogy model developed in the West. More recently, Structured Pedagogy has proved to be effective in impact assessments, etc., and has been applied to a USAID-funded Quality Reading Program for developing countries. It has become a teaching model that is recommended by the Global Reading Network.

RTI, a research institute in the United States that developed EGRA, an assessment tool that has

[2] Banejee et al. (2016). The Learning Camp (2013-2014) short-term intensive learning achievement study model led to an improvement in scores by an average of 0.7 SD in language and mathematics through 10 days x 4 of remedial lessons (40 days) and a 10-day summer camp. The government model with regular teachers led to an improvement in scores by an average score of 0.15 SD with 30-60 days of teaching.

[3] https://scienceofteaching.site/how-to-guides/learning-outcomes/topic/lesson-1/

been deployed in more than 75 countries (120 languages) worldwide[4], presents the five "Ts" as an effective approach to teaching reading and writing and improving results. The five Ts are Teach, Text, Time, Test, and Tongue. In particular, with regard to improving teaching methods and maximizing the impact of teaching time, research is building up on systematically and explicitly showing "what and how to teach" (explicit instruction), minimizing movement (between learning items), and methods for effectively implementing Structured Pedagogy with consistency maintained in teaching methods while repeating familiar routines. Efforts have also been focused on the large scale rollout of the model through the development of guidelines and how-to manuals.

(2) Structured Pedagogy Approach

Structured Pedagogy is a model that promotes changes in the quantity and quality of teaching practice in classrooms, while minimizing the impact of teacher qualities and abilities. It consists of a number of components such as systematic curriculum revision and textbook development, preparation of teacher guide books, teacher training, and enhanced coaching and monitoring. Teachers with inadequate knowledge and teaching skills can increase substantial teaching hours, provide instruction and set activities in order by giving classes faithfully following a script written in the teacher's guides, and ensure a certain level of quality through regular assessments. According to Kim and Davidson (2019), Structured Pedagogy is defined as "an instructional framework that integrates multiple principles to promote students' successful learning," and it consists of six principles.

1. Maximizing instructional time	Maximizing class preparation time, actual class time, and the learning activity time of children.
2. Practicing systematic and explicit instruction	Systematization of teaching content based on evidence. Ensuring systematic curriculum (identification and ordering of desired skills and subskills)
3. Establishing instructional routines	Structured lessons with drills, problem presentation, solution modeling, exercises, feedback, and review. Establishment of "I do (teacher demonstration)", "We do (together)" and "You do (students do tasks themselves)" teaching routines.
4. Providing scaffolding	Systematic guidance and support for children during class and step-by-step support to promote children's independent learning.
5. Making assessment-informed decisions	Implement formative assessments to deal with diverse learning needs and provide appropriate teaching.

6. Fostering Socio-Emotional Learning	Engendering dialogue and relationships between teachers and children, and a classroom culture. Emotional support from teachers influences the ability of children to cope with social challenges, their emotions and learning activities.

Kim and Davidson (2019)

(3) Impact on Learning

In Africa, Structured Pedagogy program interventions have been shown to have a greater impact on learning than many other alternative technical intervention designs, including at a large scale.[5] There is strong evidence that the most effective way to transition learners from a “poor” to a “fair” level is by providing scaffolding for instructors with poor skills. This has been especially demonstrated for students with lower scores. It has been suggested that the average effect of the Structured Pedagogy program is fairly large. However, this average effect has a wide variation, and for the intervention to have elevated effectiveness adequate amounts of teaching materials need to be provided to children and teachers at the optimal time, classes need to be taught using established teaching routines, teacher training needs to be of sufficient quality and duration to enable teachers to acquire the knowledge and skills needed to teach new learning content, and support for teachers has to be on an ongoing basis.[6]

BOX: Structured Pedagogy Definitions and Components

The term of Structured Pedagogy does not have a universal definition, and it is not used consistently to refer to the same set of interventions, but it is independently defined and used in reports and papers. The definition of Structured Pedagogy from major organizations is introduced below.

・ (1) UNICEF (Eastern and Southern Africa Region (ESAR) "Structured Pedagogy"[7]

Definition: *"Structured pedagogy refers to a systemic change in educational content and methods, delivered through comprehensive, coordinated programmes that focus on teaching and learning, with the objective of changing classroom practices to ensure that every child learns. The ultimate goal of structured pedagogy is that all children gain foundational (literacy*

[5]The average effect size of 0.44 SD seen in two reviews of recent SP programs is greater than the average effect size of the 90 percent learning improvement program in Sub-Saharan Africa. (Science of Teaching, 2021)

[6] Snilstveit et al., 2015

[7] ESAR 2020 working paper. Chakera, S., Haffner, D., Harrop, E., (2020) UNICEF Eastern and Southern Africa Region Working Paper - Structured Pedagogy: For Real-Time Equitable Improvements in Learning Outcomes. UNICEF: Nairobi.

and numeracy) and transferable (social and emotional) skills, as an essential grounding for ongoing learning and for life and work."[8]

Components: The Structured Pedagogy framework simultaneously implements four inter-linked components: (1) teacher professional development; (2) providing teaching and learning materials; (3) formative assessment; and (4) activating primary caregivers (caregiver engagement).

・(2) Global Reading Network (USAID)[9]

Definition: "*Structured Pedagogy is an instructional framework that integrates multiple principles to promote students' successful learning and consists of six principles.*"

Components: (1) Maximization of instruction time, (2) practice of systematic and explicit instruction, (3) Habituation of instruction methods (review of previous session, task presentation, provide solution methods, guarantee time for exercises, feedback, review, establishment of I do, We do, You do class routine), (4) scaffolding, (5) instruction based on assessment, and (6) fostering social emotional learning.

(3) Science of Teaching "A How to Guide: Structured Pedagogy"[10]

Definition: "*Structured Pedagogy is a coherent package of interventions specifically designed to improve classroom teaching*".

Components: (1) student books and materials, usually provided on a 1:1 basis, (2) teachers' guides that provide daily lesson plans for teachers at various levels of proficiency, (3) teacher training organized to reinforce specific skills in teaching the lessons, and (4) ongoing support to teachers (coaching and support community).

* According to the how-to guide in (3) above, there are eight tasks and conditions (investments) for successful Structured Pedagogy programs as shown in the graphic on the right. In the same guide, a booklet is prepared for each of 8 items, and effective practice methods and points requiring attention are described in these booklets. If these tasks are not put into practice, then interventions will be small and experimental and they won't be able to have a major impact in the kind of improved learning that comes from teacher transformation and system improvements. That is to say, the success of a program requires a mechanism for coordination

[8]*Transferable skill:* Skills that are typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge and that can be used in a wide variety of situations and work settings (UNESO).

[9] Kim, Y.-S. G., & Davidson, M. (2019). Promoting successful literacy acquisition through structured pedagogy: Global Reading Network Critical Topics Series. Prepared by University Research Co., LLC.

[10] How to Guide Structured Pedagogy（2021） https://scienceofteaching.site/

and implementation between learners, teachers and relevant actors in the education system.

Source: Structured Pedagogy, Science of Teaching for Foundational Literacy and Numeracy

Attachment 3: Madagascar Trial Report

Project Research "Development and Scale-up of 'Improving Children's Learning' Model through Community Participation in the African Region"

Madagascar Survey Report

1. **Survey Date:** July 22 to August 5, 2019

2. **Survey Purpose:** As a result of collecting data on successful projects that have proven to be effective interventions for improving children's basic academic abilities through literature research, field surveys were conducted on projects that were determined as being particularly effective in newly formed models for improving children's basic academic skills through community participation (Community Participation Basic Academic Ability Improvement Model). These will then be analyzed from the viewpoint of success and failure factors and applicability, sustainability, and future development potential for the African region.

3. **Survey Background:**

In the Minimum Package for Quality Learning (PMAQ), which is being implemented in Madagascar under its educational development project "Participatory and Decentralized School Management Support Project" (Tafita), in addition to a foundation model that is aimed at improving school management, Pratham's Teaching at Right Level (TaRL), under which academic ability improvements have already been confirmed in impact assessments carried out in other countries starting with India, and the TaRL-Drill Model (TaRL-Drill-PMAQ Integration Model), which is used in phase 2 of Niger's "School for All: Project to Support Educational Development through Community Participation" (where academic ability improvements have also been confirmed), are being put into practice. The ASER (Annual Status of Education Report) test proposed by Pratham has also shown improvement in basic academic skills using the same model, and the impact assessment end-line test currently being conducted is expected to show significant improvement as well.

This survey report will discuss the effectiveness of the model and identify the primary factors for improving children's academic abilities based on the results of field surveys that have been conducted by putting a focus on the TaRL-Drill-PMAQ Integration Model (mathematics). Moreover, the report will analyze the potential for widespread use of the Forum/TaRL approach, a highly versatile model currently being tested by the aforementioned projects. In addition, as a conclusion, this paper will summarize the common factors with the ESMATE project in El

Salvador, in which the author was involved and impact assessments confirmed the improvements in academic abilities.

4. Survey Results

The following are the results of a careful examination and discussion of the information obtained through interviews with project personnel, observation of remedial lessons at schools, visits to community general assemblies, and observations of learners' reactions and drills.

(1) Validity and effectiveness of the foundation model + the TaRL-Drill-PMAQ Integration Model for academic improvement based on the three elements for improving learning

Projects that have been carried out by JICA up to now, and in which improvements in basic academic skills have been confirmed, are strategically designed to facilitate learning through the mutual interaction of the three elements of “learning time”, “teachers (facilitation and quality of learning)”, and “learning materials and a learning environment” (quality of learning content). This section will analyze the validity and effectiveness of the model based on the framework composed of these three elements.

«1» Mechanisms for guaranteeing “learning time” → Guaranteeing learning time under the foundation model

In the foundation model, the functions of school management committees (SMC) are revitalized, commitment is generated from all education-related stakeholders in connection with improving learning, issues are analyzed from shared test results, and remedial lessons are implemented as an action to improve the situation with the consensus of all relevant persons. In addition, this intervention is one that ensures continuity through surveillance of learners, and its effectiveness in guaranteeing learning time is very high.

The World Bank's “Learning, To Realize the Education Promise” which was issued in 2018 points out that there are many nations in the African region that do not meet legal standards for regular school hours due to teacher absences, which is caused by inadequate management and school administration. This guaranteed learning time has been found to be a very effective alternative for ensuring that children have learning opportunities and for enhancing conditions for improved learning.

«2» Guarantee a fixed level of education quality unconnected to the quality of teachers → Guarantee of “learning materials and a learning environment” by means of teaching materials and learning programs

The TaRL-Drill-PMAQ Integration Model is being introduced based on the guarantee of

learning time by means of the foundation model. While it is based on Pratham's proposed Teaching at Right Level (TaRL), its content has been adapted to the current situation in Madagascar. This content is especially excellent from the points that it has the aim of mastering 0 and natural numbers, which form the foundation of mathematics, and the four arithmetic operations using these numbers, and that it provides streamlined and systematic instruction that is tailored to the needs of the learners.

Moreover, for learning content that requires proficiency, individual learning is guaranteed by means of drills, so that children can become proficient in numeracy and other processes that they have learned through the TaRL program. In addition to being compatible with the TaRL program, these drills are organized so as to enable learners at different levels to progress their learning without stress. Furthermore, the introduction of both ensures that learners have “learning materials and a learning environment” that does not depend on the quality of teachers.

«3» Mechanism to support “teachers (facilitation and quality of learning)” → Training and capacity building of teachers involving central government education officials and training systems

When introducing the integration model, technical officers at a central level, such as Ministry of Education, and technical officials at regional and district education offices are positioned as master lecturers to implement hospitable training, and a mechanism is devised in which they train up district-level technical officials and school principals as local lecturers, who then further train up teachers and local facilitators. In implementing the model, the existing and already functioning education administration system in the country is being utilized to increase its effectiveness and sustainability. Teaching methods have been established for the technologies and various activities to be introduced, and key content can certainly be mastered through sufficient simulation and OJT. In addition, this mechanism is highly sustainable because it uses the national educational administration system, and follow-up activities are conducted smoothly, so there is a solid system for continuous follow-up of learning supporters. In school visits, it was confirmed that regardless of the cascade, information reached learning supporters, and it was confirmed that the mechanism for strengthening these supporters was functioning.

As described above, out of the three elements for improving learning in the foundation model + TaRL-Drill-PMAQ Integration Model, learning time is guaranteed through remedial lessons supported by the foundation model, learning materials and the learning environment (quality of learning content) are guaranteed through (secondary) teaching materials such as the TaRL-Drill-PMAQ Integration Model, and a mechanism for strengthening teachers (facilitation and quality of learning) is internalized within the strategy. All of which makes this an effective strategy for

improving academic performance.

(2) Validity and effectiveness of the foundation model + the TaRL-Drill-PMAQ Integration Model for academic improvement based on four major factors affecting academic performance pointed out by the World Bank

The “Learning, To Realize the Education Promise” published by the World Bank in 2018 listed four important factors for schools with poor academic performance. These are “learners,” “teachers,” “school input,” and “school management.” Looking at the current situation for each factor, learners are not ready to learn, teachers lack skills and have low motivation, and school input and school management are not linked to instruction and learning. From here, the validity of the model for each of these factors will be discussed.

«1» Handling unprepared “learners”

For learners who are not ready to learn, interventions are being made to ensure readiness for learning through reinforcement of basic academic skills (numeracy and the four arithmetic operations) via remedial classes, and a very reasonable strategy has been shaped. In addition, through the distribution of teaching materials and tools, and drills, opportunities for learning and the quality of learning are guaranteed even for learners who are in a disadvantageous socio-economic situation. Moreover, some schools are also providing school meals, which additionally address the impact of nutrition on learning identified in the report. The project has appropriate strategies for learners through these interventions.

«2» Handling “teachers” who lack skills and have low motivation

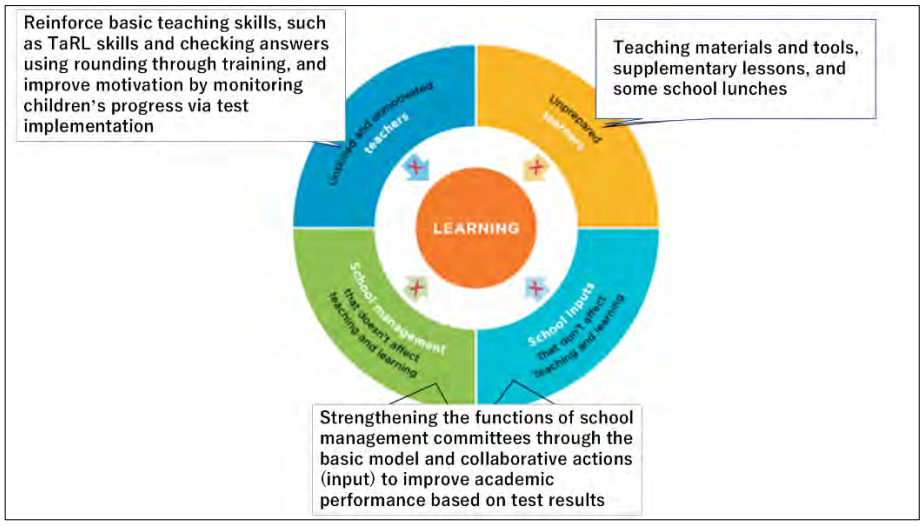
In a situation where training systems, etc., are inadequate, training activities together with monitoring activities by education administrators are being carried out to enhance the simulation and practical training of content related to PMAQ, which uses the TaRL foundation model, TaRL reading and writing, TaRL math, and drills, for regional facilitators, as well as education administrators of districts and provinces, in a manner that reinforces teachers. Action is being taken through these interventions against the skill shortages of teachers and facilitators. Moreover, implementation of regular testing and the sharing of results develop surveillance environment, and efforts are being made to elevate the motivation of teachers by improving results. There is sufficient intervention in regard to this factor.

«3» Handling “school input” and “school management” that doesn’t lead to teaching or learning

Through the foundation model, not only school officials but also local residents are involved

in actions to ensure consistency to improve academic ability. For example, such actions include the sharing of test results, better consensus-building for actions to improve academic ability and the surveillance of learners, implementation of remedial lessons, sharing of results that show improvement, and school input. Sufficient interventions are being made in this regard.

Figure 1: Relationship between the Four Learning-Related Factors (World Bank) and the TaRL-Drill-PMAQ Integration Model



As seen so far, multiple factors are linked to improved learning. A comprehensive approach to these multiple factors is the foundation model + TaRL-Drill-PMAQ Integration Model approach. Projects in Niger and El Salvador, which so far have had an impact on academic ability, have comprehensively approached the three elements for learning improvement, and so one of the keys to improving academic ability may be comprehensive interventions over independent interventions, such as teacher training or the creation of teaching materials.

(3) Identification of primary factors that contribute to learning improvement in all kinds of activities

While the effectiveness of the model as a whole has been discussed so far, the contributing factors for improving learning for each of the activities (Pratham TaRL activities and drill activities) will now be discussed in terms of effectiveness and versatility (rollout feasibility).

The TaRL Program

From the perspective of effectiveness

«1» Learners are classified into levels based on test results

A core part of TaRL is the use of testing every 10 days, and it is based on the results of these tests that students are placed into classes, and having the learning content be in accordance with the level of learners contributes to the improvement of academic ability. At the schools that were visited which have put the integration model into practice, students had been accurately placed into levels, and the smooth implementation of activities and pair activities was confirmed. Many learners could solve problems connected to drills, and the effectiveness of the model could be confirmed. Moreover, as the degree of difficulty does not place a large burden on learners they can build up experiences of success in terms of being able to say "I can do it", and this contributes to maintaining and improving their motivation. This also reduces the complexity of the support by facilitators because the learners they are supporting are at the same level.

«2» Processes for solving problems are simplified.

At all schools that were visited it was possible to see how extremely well learners did the four arithmetic operations using column method. With TaRL, students understand processes, etc., through personal hands-on math activities, and confirm them, such as calculations, before getting into fixed activities. Since this procedure is very clear, extra information is eliminated and this creates an extremely high rate of process comprehension as the learners are shown consistently in a manner that joins up with hands-on activities. Good teaching materials and learning materials always have explicit processes for solving problems. As far as can be seen from just this high level of comprehension, it can be said that TaRL has achieved this factor.

«3» (Game) The aim of activities is clear. (excluding hands-on math activities)

For example, when doing games and hands-on math activities the purpose of doing them can become just for doing them (no purpose). As such, now and then classes can be seen with activities where it is not clear what students have learned after the class is over. On the other hand, all game activities under TaRL are for practicing problems in order to ensure children's long-term retention of knowledge, which makes the aim of implementation very clear. Repeated practice with just paper and drills makes learners tired and reduces the effectiveness of learning. Therefore, learning through games is effective in improving learning.

«4» Expanding from reading and writing programs to math programs

There is a correlation, particularly in lower grades, between reading, writing, and math skills, and it is conjectured that reading and writing are the basis for, and linked to, the efficient learning of mathematics (numeracy). The impact assessment of the El Salvador ESMATE Project also studied the point that the effect is higher for children with excellent academic performance, especially at younger ages, and that this is related to reading and writing skills. For the integration

model in Madagascar, it was considered that it would be very effective to do math program after finishing the reading and writing programs. At the schools that were visited, it was found when watching children tackling math word problems that their reading skills were at a level that did not cause any problems, and due to the many learners who easily understood the instructions given by facilitators, it was confirmed that their reading and writing skills are at a high level. It is believed that the order in which TaRL is introduced is also a major factor contributing to the large academic improvements seen in Madagascar. Furthermore, another major success factor is that the program is basically carried out in local languages.

«5» Guaranteeing individual learning time

Children in lower grades have difficulties building communication in group activities that have more than four members. Moreover, in many cases members within groups are divided into roles, and it is difficult to master skills that should be acquired individually through group activities. In addition, in the ESMATE impact assessment conducted in El Salvador individual or pair learning time was defined as active learning time and this was measured during class observation, but it was found that many teachers with high scores in tests tended to guarantee more active learning time. TaRL activities are patterned, and individual learning time is guaranteed at the end. Consequently, it is believed that there is a point that individual learning activities being also practiced within TaRL is effective in improving academic ability.

From the perspective of versatility (rollout feasibility)

«6» Test content and implementation procedures are both simple.

The ASER tests used in TaRL consist of reading two digit numbers, adding two digit numbers, subtracting two digit numbers, multiplying two digit numbers by one digit numbers, and dividing two digit numbers by one digit numbers. As it is a goal to be achieved, there are clear criteria, and an instructor can set a very clear goal of where he or she wants to go. While there are many situations where activities with unclear goals are implemented, the learning activities of TaRL, which has clear objectives, are implemented in a consistent manner to achieve set goals.

The purpose of these tests is to grasp the level of children and place them into classes based on test results, which is shared with local residents. In line with this purpose, the test is designed to be simple and easy to use, which enables effective placement, reduces the burden of scoring, and makes it possible to share the status of academic improvement with local residents in a way that is easy to understand for them.

«7» The basic flow for each activity is standardized.

The development of each activity is standardized as follows: teachers giving an explanation to

the whole group→ designating children and confirming the activities as a whole → doing group / pair activities → individual activities (depending on the situation). Therefore, once the teachers have mastered this flow within a single training, then they can develop all activities in the same way without any special preparation.

Although doing all activities while reading a manual makes doing an activity harder on learning supporters, having a commonality behind the development of all activities means that not only is there less of a burden on supporters, but also that the needed training time can be reduced. Consequently, consistency and commonality in activity development methods leads to high versatility during roll out.

In addition, recently there has been growing attention on the importance of learners having self-reliance in learning, but learning methods and learning habits have to be acquired for this to be achieved. Unifying the development of activities in this way means that children form learning habits, and this gives a secondary effect that a learner can take study independently and together with being less of a burden on supporters, learning efficiency is increased.

«8» There is consistency in the method of introducing and consolidating each learning content.

The learning flow for each learning theme is also consistent. When introducing each learning content, activities for understanding concepts always include hands-on activities, so that learners can understand through experience by relating actions to the processes and symbols. Moreover, activities and drills are utilized for consolidating concepts. As this flow is unified in all learning content, it is effective in cutting the burden of supporters, clarifying the objectives of learning activities, shaping the learning habits of learners, and shaping learning rhythms.

«9» Each activity is simple, or there is very little gap with teachers' behavioral patterns in teaching.

While some instructional hands-on activities require some simulation, almost all games, use methods and class implementation methods are very simple. Or rather, the activities match the behavioral patterns of teachers in this region of the world, and this is a factor that has made them easy for many teachers to do, and for the activities to be rolled out, even with limited training hours.

«10» Learning content is carefully selected.

Within each learning content, the core parts are particularly addressed, and this is content which does not apply excessive stress on learners. For example, when introducing subtraction, consideration is given to introducing the most easy to understand concept known as "How many

do you have left?", which is referring to "take away" in English, and the minimum needed learning content is carefully selected for the efficient acquisition of numeracy and natural number calculation skills.

«11» Limited resources are being effectively utilized.

Since teaching materials and teaching tools distributed with TaRL include teaching tools that are selected for not needing preparation and teaching material expenses, costs are suppressed, and this also makes the method highly versatile. In addition, even if it is difficult to procure funds for distribution, it is simple to prepare substitute materials, or to create them, and this also makes the system more versatile.

«12» The efficiency and reusability of teaching materials is high.

For example, 81 kinds of addition answers are shown in a table in an addition chart. In this way, teaching materials that enable more learning contents to be confirmed with less investment are selected. In addition for example, the selection of teaching tools that can be reused in various learning content also makes teaching materials highly efficient and contributes to ensuring versatility. Such learning content includes activities for "mastering reciting numbers by counting them", as well as activities such as "understanding the meaning of decimal places by summarizing 10s", "understanding the meaning of the operation of addition and subtraction through manipulative activities", "understanding the meaning of division through distributed activities", and "understanding the process for column calculation".

TaRL activities were carefully selected through repeated trials, and the many contributing factors have been examined above, but the high efficiency and simplicity of the activities are particularly outstanding.

<u>Drills</u>

From the perspective of effectiveness

«1» Guaranteeing quality of learning content that does not depend on the quality of teachers.

It can be seen in many cases in math classes in countries that have poor academic performance that teachers present practice problems that do not match the class purpose on that day, and children are perplexed. Even in classes that were observed in Madagascar there were examples of classes where the division of 3 digit numbers by 1 digit numbers was introduced, but 4 digit numbers divided by 1 digit numbers were in practice problems. The provision of learning materials such as drills is a very important factor for improving learning because it guarantees that learners can learn regardless of the quality of the teachers.

«2» Setting practice exercises with simple instructions.

To enable learners to work on drill learning without instructions from facilitators, the exercises are standardized into simple instructions, which reduces the burden on learners and ensures smooth learning. In addition, a simple structure is adopted and the timing for requesting facilitators to mark the test paper is clearly indicated. This is a structure that makes it easy to form learning habits for learners, and which is very easy to use. Even in the classrooms that were visited in this survey, and which were observed to use drills, it was rare to see children who didn't know what to do and couldn't really write. This is evidence of how clear the instructions were and the good formation of learning habits.

«3» Structure from simple exercises to difficult ones, and ensuring consistency with the TaRL program.

Ensuring consistency in content which is complementary with the TaRL program means that, as an overall flow, content is developed from simple to difficult, and arranged so as to reduce stress on learners. This is a very important point for guaranteeing continuity.

«4» Emphasis placed on teachers checking answers and reworking exercises.

Effective Teaching Practices in Primary School Classrooms, published by the World Bank, states the importance of perseverance by learners, points toward the importance of solving and reworking until this is achieved. In addition, in the ESMATE impact assessment conducted in El Salvador, teachers who had greatly improved results showed a high tendency to frequently check answers. Therefore, the timely checking of answers is a very important factor in preventing mistakes from becoming habitual. A tick box is placed at the point to be checked by the facilitator in the drill, the timing for checking is easy to understand. Furthermore, it is very easy to understand, as there are two check points by which reworking exercises can be guaranteed, and further, a check after this is guaranteed. In addition, because the instructions are thorough, learners are able to acquire the habit of reworking, which is very important for improving their academic performance.

«5» Important themes are dealt with in a spiral (step-by-step and repetition).

Learning content is organized so that content which is difficult to master at one time can be gradually developed, and mastered through multiple drills and step by step repetition. For example, setting important addition and subtraction calculations in the second half of drill No. 1 and the first half of drill No. 2, and setting multiplication and division calculations in the second half of drill No. 2 and drill No. 3. It's been proven that repeating content at a time it is being forgotten

reinforces long-term memory, which is a very good structure.

From the perspective of versatility (rollout feasibility)

«6» Careful selection of minimum required problems in drills

There were seven drills in the first version, but in the current version this has been reduced to three in line with the progress of the TaRL program. Such cost-related efforts increase versatility.

What was surprising when observing the use of drills was that most learners were self-reliant in their efforts to learn, and moreover they were properly reworking the exercises. It has been conjectured that these kinds of good learning habits have a great contribution toward improving academic ability.

As seen above, both the TaRL program and the drills have a great number of success factors in terms of effectiveness and versatility.

5. Potential for the Forum/TaRL Approach to Achieve Greater Reach and Versatility in Other Countries

So far, it has been found that the integration model has a very large number of success factors in terms of effectiveness, TaRL and drills, both in terms of effectiveness and versatility.

However, when implementing scale-up, or introducing and rolling out the approach to other countries in Africa as a measure against the learning crisis, it is necessary to carefully consider the following points, particular from the aspect of versatility, and to flexibly introduce and develop it.

(1) Conditions related to training, such as the number of feasible training days

In the TaRL-Drill-PMAQ Integration Model, training of about 10 days is required at the stage of training master lecturers, and four days of all day training is needed at the stage of training facilitators. It has to be investigated whether there is a training system for delivering this training, whether there is an existing implementation system, and where the participating cost-sharing institutions are, and work out a feasible and highly versatile training format, and change it to the investments that meet its requirements.

(2) Possibility for covering printing costs of TaRL teaching materials and drills

In particular, when taking scale-up into consideration, it is necessary to really examine the feasibility of the printing and distribution budget and to carefully select activities, distribution teaching tools, and supplementary teaching materials according to the budget size.

(3) Confirmation of the implementation system for accompanying instruction (support for visits to remedial lessons)

Although there is importance attached to accompanying instruction and monitoring in many projects, there is a tendency for these to decrease in frequency due to excessive work for educational administrators, insufficient transportation expenses, and an excessive number of managing schools. There is a need to review feasible implementation systems.

The forum/TaRL approach which is currently being implemented in Madagascar is a model that is highly versatility in responding to the above concerns pertaining to its roll out.

Although this approach doesn't change the point that it builds a foundation model and then proceeds to the TaRL program as in the integration version, when implementing TaRL it adopts a strategy of simplifying activities without distributing teaching materials, teaching tools, and drills and also using existing training systems and association mechanisms for local introduction training. It is a basic academic skills improvement strategy that enhances the feasibility of rolling it out.

Since there weren't any end-line tests in place at the timing of the survey, there will need to be a follow-up analysis of the final results. However, having confirmed improving test results every 10 days at all schools, there is an extremely high possibility of improved test results. Under this approach, instead of randomly reducing the number of teaching materials and tools that have high preparation costs out of all teaching materials in order to keep unnecessary costs down, there is careful selection that takes into account local circumstances, such as the load on facilitators, for example where preparation causes a lot of work and the number of cards that are complicated in terms of carrying out operations and activities, as well as the complexity of training. It was confirmed that the facilitators at the three schools which were visited were able to prepare materials and carry out activities without any problems, and learners were also able to participate in activities without any problems, and the rate of correct answers was sufficiently high. In addition, with regard to practice exercises set by facilitators in place of drills, the needed content for addition and subtraction which form the basis for the four arithmetic operations are covered. Moreover, the content of these exercises are very carefully selected, so that it guarantees the systematization of the learning content of learners and so that only content which doesn't cause an excessive workload on learners and on the preparations of facilitators remains. As a result, it is possible to provide more direct content for improving the results of attainment target tests. Moreover, the utilization of the forum enables this model to be very effective as a general-purpose model for reinforcing the surveillance mechanism as, for example, commitment that can be gained from local governments in addition to education administrators. Continuous close attention needs

to be paid to monitoring end-line results in August 2019, considering differences with the integration model, and also on the improved version of the approach, which is due to be in place next year.

6. Conclusion on Identification of Primary Factors for Improving Learning by Extracting Common Factors with the El Salvador ESMATE Project

Finally, at the end of this survey, the present report summarized the following primary factors for improving learning which are common to the ESMATE project that is being carried out in El Salvador, and which I have personally been involved with up to now, and in which improvement in academic ability was confirmed by impact assessments using RCT.

(1) Comprehensive approaches to the three elements for improving learning in strategies: "learning time", "learning materials and the learning environment" (quality of learning content), and "teachers" (facilitation and quality of learning)

In both projects, major components, including school management improvements and the preparation of teaching materials, tend to be emphasized, but in reality it could be seen that there are comprehensive interventions in regard to the three elements for improving learning. Especially, it was realized that comprehensive interventions are necessary for guaranteeing learning time. Moreover, countries on the verge of a learning crisis have many factors which contribute to poor academic performance. Therefore, it is conjectured that the directly closer interventions are to learners, the better expectations can be for results.

(2) Evidence-based follow-up activities after the start of activities

Doing testing is a key component of both projects and is being used in a variety of manners. In the ESMATE project, teachers' instruction books suggest unit and final exams, and the results of these are analyzed at meeting-type monitoring carried out during the school semester and reflected in instruction plans for the following semester. The Tafita project takes the results of the four tests in TaRL into consideration, students are then placed into classes each time according to these results and learning is provided which corresponds to each level. Test results are shared with community general assemblies as the basis for formulating actions for the next semester. In this way, the results of tests become key while effective use is made of them, and activities are developed while realizing the evidence-based quality improvement.

(3) Simplified introduction, training and development for teachers utilizing existing systems

Both projects use existing education administrators and training systems to formulate content

that is based on local conditions, to carry out highly feasible training programs. The involvement of education administrators in the training means that they can be used for future monitoring, etc. In addition, the content of cascade training is carefully selected with forethought for accurate information can be disseminated.

(4) Converting teachers from "instructors" to "learning supporters" through tests

Through the implementation of testing and the analysis of the results, there is a transition in perspective based on valuing the results (output) of the learning of learners, rather than being based on instruction (input) in regard to teachers (facilitators), and teachers (facilitators) are encouraged to transition their perspectives to assessment results rather than one-sided instruction, or rather, support which meets the needs of each learner.

(5) Making a common basic flow for classes and activities

In EMSATE, the basic flow of mathematics classes and the structure of textbooks concur, and they have a common flow. In addition, in Tafita, the basic flow for the development of each TaRL activity and the drill implementation method are standardized. As such, teachers (facilitators) are easy to use, and moreover it is structured so that learners can easily form learning habits.

(6) Guarantee of individual learning time

In ESMATE, individual learning is recommended during class as an active learning period, and teaching materials are structured so that a lot of time is guaranteed, particularly for practice exercise time. Furthermore, in Tafita, individual activities are guaranteed at the final step of TaRL activities, and sufficient individual learning time is guaranteed when it comes to solving drills. As a result, learning content is anchored in place and medium- to long-term memory is reinforced.

(7) Importance of correcting answers (marking test paper) and reworking exercises

ESMATE teaching materials set the first question of practice exercises as evaluation exercises, and teachers are directed that the correct answer rate for this question should be assessed, that answers should be matched to other questions, and that questions answered wrongly should be reworked. Even in Tafita, the process of correcting answers and reworking drills is particularly thorough, and action is taken to avoid mistakes becoming fixed, and for children to have perseverance to do their best until the knowledge is internalized.

(8) Teaching materials and programs which guarantee the systematization of learning content

Although there are some differences between these projects, both use curricula or programs

that utilize the systematics of mathematics, especially the characteristics of the decimal positional system, so that learners can learn without stress using their own existing knowledge. In addition, learning content is carefully selected.

(9) Processes with clear teaching materials and programs for learning objectives and solutions

The purpose of learning (what to learn) is clearly signposted in both projects, and processes for solving exercises are similarly signposted in activities and teaching materials, with forethought for enabling learners to learn independently, so that learning doesn't become an activity.

(10) Approaches to guarantee learning time

Although there is room for improvement in ESMATE, it has the objective of guaranteeing learning time in and out of class through the provision of teaching materials, guaranteeing class time by formulating and reviewing annual teaching plans, etc. On the other hand, in Tafita planning is made for guaranteeing learning time by putting into practice remedial lessons by means of activating the functions of school management committees based on community participation.

The two projects take different approaches, but they take steps against unguaranteed learning opportunities in countries that are on the verge of learning crises.

7. Closing Remarks

This was the first time for me to visit places of education in the African region. Despite the differences in the environment that surrounds schools, it was observed that the issues such as the quality and enthusiasm of the teachers, the situation for learners, and the challenges towards children's long-term retention of basic mathematical knowledge are common to all countries, with no connection to culture or language. This hints at the possibilities for the adoption of projects that have produced results in many countries around the world. In facing the learning crisis, it is realized once again the significance and importance of analyzing strategies and programs that have produced results in improving academic skills worldwide and exploring their feasibility. In regard to this significance, it is of deep interest that the multinational model that was observed in this survey, which combines the foundation model and the TaRL-Drill-PMAQ Integration Model with knowledge from Niger, India, and Japan, is achieving great results in improving academic skills in local regions of Madagascar.

In this survey, common factors, etc., were identified based on my own experiences in Central America and experiences acquired from the ESMATE impact assessment, but common factors such as testing and the utilization of results naturally emerged as keys. The primary objective of

this program is to provide support tailored to the needs of children. It also had large secondary effects such as the sharing of test results at community general assemblies for setting school management policies, evaluation from teacher (input) base to child transformation (learning) (output) base, shifting perspectives from instruction to support, enabling supporters and others to monitor academic performance improvement and to make evidence-based policy decisions based on the improvement, and the uplifting of motivation of learners and parents. It was reaffirmed on the importance of the program.

The previously mentioned World Bank mantra of **"**Learning, To Realize the education promise" proposes three directions for improving academic skills which includes testing.

- **"**Assess Learning - to make it serious goal"
- **"**Act on evidence - to make school work for all learners"
- **"**Aline Actors, - to make the whole system work for learning"

As seen up to now, these are all encompassed in the foundation model + TaRL-Drill-PMAQ Integration Model developed by the Tafita project, and it can be confirmed to what extent the model is appropriate and effective in improving academic performance.

With regard to the feasibility of rolling it out in other countries, there are some points that should be noted, such as costs and reviewing conditions for introduction. Therefore, the results of the Forum/TaRL approach which is currently being implemented at a cost per person of 13 yen, will continue to be closely monitored, and the effects of other approaches will be analyzed by comparing the results of countries such as Niger, where the focus is on drilling, and countries where only TaRL is being implemented. The analysis has the potential to provide a variety of intervention options that apply to a variety of conditions, and therefore continues to be conducted.

In addition, detailed primary factors are covered in this report, but the underlying common point for all projects in which improvement in academic abilities has been confirmed is that strategies are well planned and take into consideration how learners can be transformed. From this perspective, I have been left with a lingering impression of the attitude of all stakeholders in Madagascar, including project participants, teachers, regional facilitators and district education officers, to eagerly engage in activities in the hope of improving academic performance. I would like to express my respect for their enthusiasm and express my gratitude to everyone who cooperated with this survey.

Appendix 1: Outline of the TaRL-Drill-PMAQ Integration Model
Appendix 2: Characteristics of the Forum TaRL Approach
Appendix 3: Improvement Points for the TaRL-Drill-PMAQ Integration Model
Appendix 4: Improvement Points for the Forum TaRL Approach

Appendix 1: Outline of the TaRL-Drill-PMAQ Integration Model

The TaRL language program was introduced as a practical model for schools that introduced the foundation model (election of locals + school activity planning + surveillance mechanism), and the TaRL math program was introduced for schools that had completed the program. The particulars of the TaRL math program are as follows.

«1» Target

The main targets under the original model are third to fifth grade students, and in Madagascar it is second to fifth grade students. This is due to the high percentage of second grade students who fail.

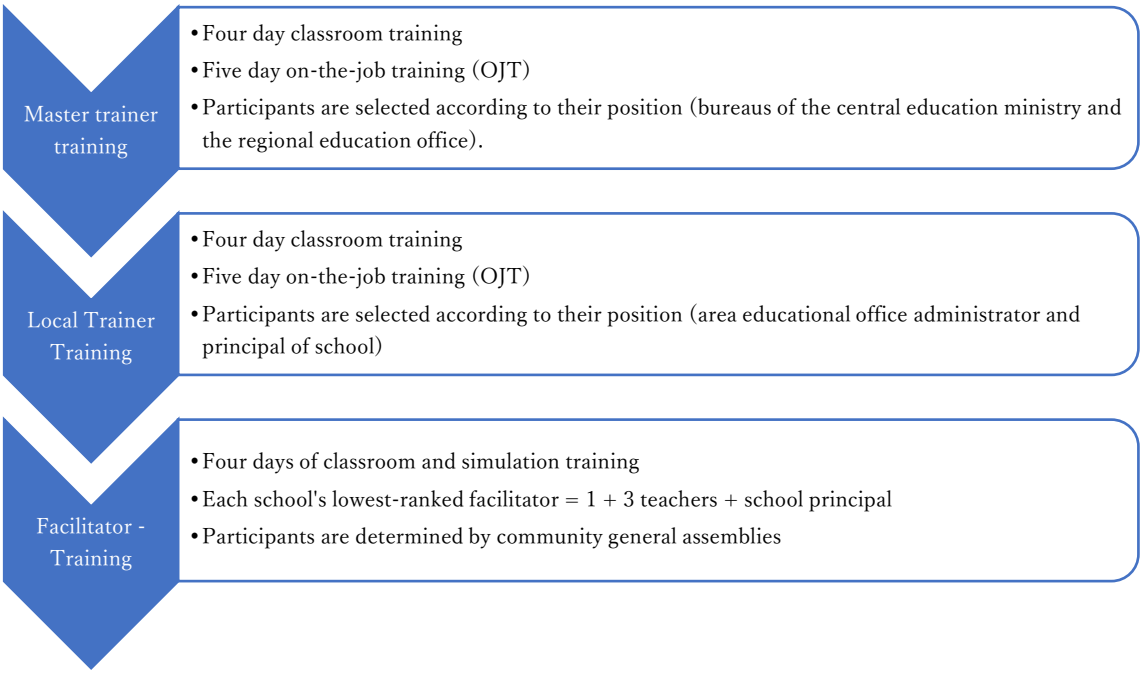
«2» Order of implementation

In TaRL, basically, children finish reading and writing programs and then progress on to math programs.

«3» Transmission for introduction of methodology

Four days of classroom training and five days of on-the-job training are provided from the project to master teachers at the central, region and district levels to deliver the methodology. The selection of master teachers is without tests, etc., and is done according to position. The number of people is between 10 and 15.

In the next cascade, master teachers provide four days of classroom lectures and five days of OJT for administrators and principals in each district and zone. In addition, they give a four day training course for one facilitator plus four teachers from each local school.



«4» Methodology implementation follow-up system

District education office administrators make three school visits to follow up on the methodology. In addition, the monitoring sheets and test results are collected and submitted to the supervisor. Moreover, every month these are followed up on at school district principle meetings held by area education offices. The principals return to their schools and pass on information to teachers.

«5» Details of the materials to be distributed

Number chart: This has 0 to 9 in the first column, and go up to 90 to 99 in the last column. Since from 0, 10, 20 all the way to 90 are arranged in the leftmost column and 0 to 9 are arranged in the uppermost row, this is a teaching tool that makes it easy to confirm how to read numbers at the scale of tens and tens of tens. Number charts are always included in Japanese textbooks, and are important teaching materials that are used for learning not the checking numbers, but also the order and regularity of numbers. Even though it can be difficult to put on a blackboard or to give to children as a handout, it is easy to create and very versatile.

Addition Chart: This is a 100 calculation chart with additions from 1 + 1 to 9 + 9. It is a very efficient teaching tool in that the addition to be learned is listed on one table, even though it can be difficult to put on a blackboard or to give to children as a handout, it is easy to create and very versatile. In addition, if it isn't there, then it is possible to also incorporate material creating activity itself into the learning activities.

Subtraction Chart: This is a 100 calculation chart with 10 to 18 in the leftmost column, and 0 to 9 in the uppermost row, and has subtractions from 10-0 to 18-9. It is a very efficient teaching tool in that the subtraction with borrowing which needs to be learned is listed on one table, even though it can be difficult to put on a blackboard or to give to children as a handout, it is easy to create and very versatile. In addition, if it isn't there, then it is possible to also incorporate material creating activity itself into the learning activities.

Multiplication Chart: This is a 100 calculation chart with multiplication from 1 x 1 to 9 x 10. It is a very efficient teaching tool in that the multiplication to be learned is listed on one table, even though it can be difficult to put on a blackboard or to give to children as a handout, it is easy to create and very versatile. In addition, if it isn't there, then it is possible to also incorporate material creating activity itself into the learning activities.

Large number chart: This is a table which includes the numbers needed to master reading them, and in which 1, 10, 100, 1000, 10,000, 100,000, and 1,000,000 are listed from the top right column, and 2 to 2,000,000 are listed below. At least, if children can remember this table, they will be able to read the numbers. This is an efficient teaching tool that allows children to check the readings of all the numbers in one table, as it contains the minimum numbers needed to be read, so at least if children can remember this, they can read the numbers. Moreover, even though it can be difficult to put on a blackboard or to give to children as a handout, it is easy to create and very versatile.

Counting sticks: These are sticks for counting. In addition, they can also be used to check decimal positional notation. They come with a rubber band, and they are grouped in tens.

Number cards (Currency Note): 1000, 100, 10, 1 number cards. This is used for checking borrowing and division calculation processes of three digit numbers and more.

Drills:

These drills consist of three books.

- A check frame is shown at the timing where teachers should check, and it has a structure that is easy to understand when teachers and children should check the answers.
- In the three books, the content that takes time to master is structured in a spiral so that it remains in each book, which helps ensure children's long-term retention of knowledge.
- The instructions are simple and easy for children to do.

・ Overall flow from simple to difficult

«6» Math programs and activities (see Attachment 4 for details)

・ Test → Classification → Repeat on a 10-day program cycle.

These tests are organized by reading of numbers, addition calculations, subtraction calculations, multiplication calculations, multiplication calculations and division calculations, and the attainment level is very clear because there aren't many types. This is very reasonable as their main purpose is to «1» identify the level of the children, and «2» share results at community general assemblies. It is also excellent in terms of scoring being easy.

・ Reliable TaRL activities per level are set from two to two each, and facilitators develop activities according to this plan.

・ There is consistency in the development of key activities related to TaRL math program. → Teachers give an explanation to the whole class → They designate children and confirm activities with the whole class → Group/pair activities → Individual activities (depending on the situation)

・ The consistency of the development of activities and the simplicity of the activities is a factor that increases the implementation rate by teachers, even if there were only a small number of training days, and the simplicity of the needed teaching materials ensures high versatility in their rollout.

・ Drills are done at the end of activities.

・ When doing drills, learners advances progress with their learning at their own rhythm and their answers are checked by a facilitator at designated points.

・ When they make a mistake they can thoroughly redo their work.

Appendix 2: Characteristics of the Forum TaRL Approach

The simplified version of TaRL is positioned as the rollout version of the minimum package for quality learning (PMAQ), and it is implemented at schools that have introduced the foundation model. Although there is no change in the foundation of grouping children according to levels from completed test, major points of difference can be considered to be reduced training agendas (practical use of existing training), reduced costs and simplified activities for TaRL handouts, reduced printing and handout costs for drills, and the use of forums.

The training agenda is the same process as in the normal TaRL version, but basically all training stages have only two days of training in a lectures and exercises format, and OJT training activities are omitted as in the normal version. The existing training agenda in Madagascar (two out of a possible three days) is used to reduce training costs.

In regard to TaRL teaching materials, activities are eliminated when it is difficult to prepare teaching materials, and basically only those that are easy to create are kept, and they are created at a school level. The costs pertaining to creation are often supported by local governments participating in associations. TaRL activities are fundamentally limited to simple preparation of teaching tools, and they are carefully selected for simple activities to enable delivery in limited training agendas.

In place of printing drills, examples of practice exercises by level are presented in materials to training and learning supporters, and they show how to gradually raise the level of difficulty while increasing foundational and basic exercises. The supporter puts the exercise on the blackboard, and the learner solves it by writing it in a notebook.

		
Schools use number charts they created themselves to improve the children's reading of numbers.	Students use notebooks to solve exercises presented on blackboards.	Checking answers using rounding and student receiving instruction. Local facilitators receive support from local government.
		
This group is doing an activity of solving a mathematical word problem.	These children are solving practice problems with their own individual blackboards.	These children are drawing numbers on the floor and doing a jump number activity.

Appendix 3: Improvement Points for the TaRL-Drill-PMAQ Integration Model

The following were proposed as improvement points during a workshop held by the project on August 2, 2019.

«1» Examination of criteria for level placement math tests

In Madagascar the TaRL program is targeted at second to fifth grade students, which starts from a grade below the original Pratham model, but few children stumble when it comes to reading the numbers at the lowest level. From this, it would be good to consider the standard for the lowest level in consideration of the load on assessors, such as instead of reading 1 digit numbers, being able to read two digit numbers and add simple one digit numbers, being able to add one digit numbers without carry and subtract two and one digit numbers without borrow, and being able to do simple addition and subtraction without counting fingers.

In addition, during the survey, it was observed that many remedial activities were near in time to end-line testing, that many learners are at the highest level, 3B, and there were children who were completing all pages of drills. For handling such children, it would be good to consider the possibilities of raising the standard of the highest level a little, so that the standard of being able to read three digit numbers and do addition and subtraction includes being able to do multiplication tables, being able to multiple two digit numbers by one digit numbers, and being able to do multiplication and division.

«2» Clarification of the objectives of training activities

In countries that are particularly suffering learning crises, as a reaction to the recognition that passive classes are bad, there is recognition that if classes only have activities then they are good (as long as the child is moving or teaching tools are being used). In particular, when a teacher is a facilitator, there are many cases in which learning activities are conducted with the understanding that as long as the activities are done, they are good enough, and they are not being linked to real learning. It is difficult to judge since this visit occurred at the final stage of the program, but for example, as a means of just finding answers for multiplication, the activity of finding the product using a ladder, which is included only once in the TaRL program, was seen in most 3B remedial activities, and it was observed that this was still being used even after the multiplication table had been memorized. Children had already mastered addition before multiplication, and since it could be seen that they were accumulating the meaning of multiplication for the same numbers, they had already mastered increasing three by three via three steps. In this case, ideally children should aim to find answers using addition, and if that is difficult it is more efficient to find answers using a multiplication chart if they are already at the stage of mastering multiplication. Within limited training hours it is difficult to gain understanding of linking content with other content, but unnecessary activities can be reduced by clarifying the purpose of the activities.

«3» Implementation of answer checking and support using learners who can check answers

In doing drills, facilitators must give individual guidance and check answers for learners who are at different levels of progress. When doing this, it was observed that facilitators included people who could

give individual guidance and check answers while walking around desks, and people who did the same while sitting at a teacher's desk. In the former case, it is harder for facilitators. In the latter case, children who have finished early and do not need individual guidance are given instructions, and it is possible that individual support does not reach the children who really need it. In addition, many children were observed waiting for their turn for their answers to be checked, and if the actual number of students is at the maximum practical number of 25, then just checking answers becomes a considerable burden.

Therefore, it would be good to consider giving children who have finished early a role of checking answers or as a mini-facilitator and increase the opportunities for support to be given. For example, to guarantee their right to learning, have them answer drills for 45 minutes and then have the facilitators check their answers for each page as usual. Then set a rule that after 45 minutes children can check the answers of their classmates up to the page that has already been checked, and they can show their classmates how the exercise should be solved.

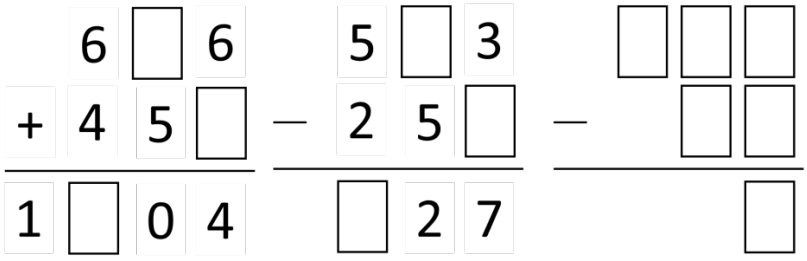
I remember the words of a teacher I met in El Salvador. “I think I have confidence in teaching first grade students. However, there are children who do not understand even if I explain to them. Maybe my words are not appropriate for my children. This is why I value mutual learning and teaching between children.” Personally, I agree, but if there is a strong sense that individual instruction should be done by facilitators, then it would be good to take into account limiting the use of children to staff who correct answers.

«4» Handling children who finish early

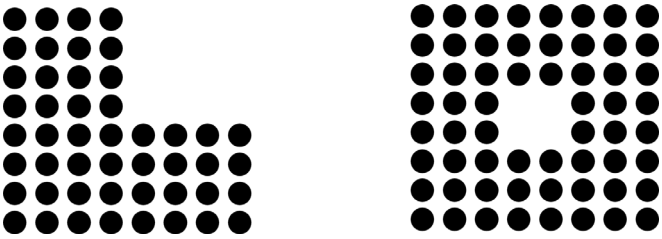
During this survey, which occurred toward the final stages of the program, learners were seen now and then who had finished all pages of a drill and who were at a loose end. If children are making the effort to attend remedial lessons, then it would be good to consider setting tasks for such children which are not burdensome to prepare. The following are examples.

Example 1: Math puzzle

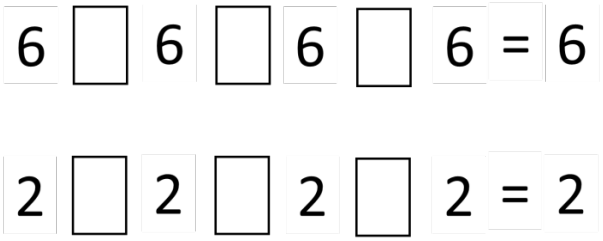
Let’s write a number that applies to □.



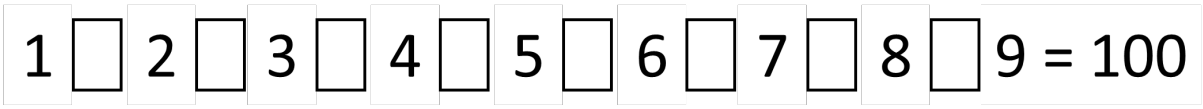
Example 2: Let’s count to devise the number of ● (let’s count using multiplication).



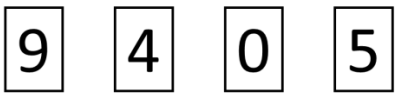
Example 3: Let’s try to reach the answer to ☐ with +, -, ×, and ÷.



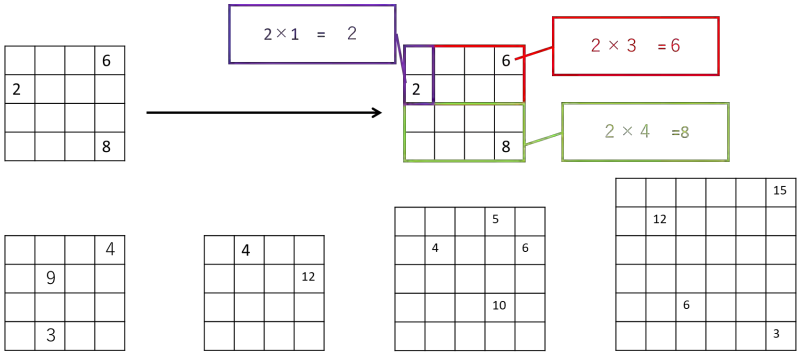
Example 4: Let’s get to 100 with +, -, ×, and ÷. There are many answers.



Example 5: Use all of the following cards to create the number closest to 5,000.



Example 6: Let's round it by multiplication according to the example.



Example 7: Let’s write the problem in 29-17.

Let’s do a math puzzle.

- Create a word problem (expression) with a 2×6 formula.
- Let's create a two digit addition calculation problem.

- Let's create a division problem.
- Write your impressions on what was difficult or what you want to try to tackle, etc.

Appendix 4: Improvement Points for the Forum TaRL Approach

(1) Time for doing TaRL activities

Since this visit was close to the end of the program, the facilitators and learners were firmly established in their learning habits, and so the activities moved along quite smoothly. When activities were completed early, it was observed that classes transitioned into fourth and fifth activities. In this survey, the forum had the objective of 80 hours of remedial lessons, so it seemed that an hour of TaRL activity and an hour of practice exercises had been fixed. However, the children had the tendency to lose concentration when they did four or more activities, the lesson had little momentum. The aim is for 60 minute of activities, and if completing three activities achieves this goal, then it would be good to be flexible, for example by shifting to practice exercises rather than unnecessarily increasing the activities. In addition, if one lesson is kept to two hours, then after completing three activities it would be good to consider flexible development, such as doing practice exercises or doing an activity that is close to games.

(2) Number of people per group in TaRL group activities

The recommended number of people per TaRL class is 25 or less, but in the simplified version this can be higher depending on the number of school classrooms and facilitators. In this case, the number of people in each group at the time of group activities tends to be large. Although it is necessary to keep in mind the lack of teaching materials, from the stage of development for elementary school students it is difficult to communicate with five or more students at the same time, and it is often not possible to guarantee effective activities if the number of students is above five. For this reason, it is necessary to give instructions on this, that the number of children in a group activity should be five or less. (The number should be as few as possible according to the actual local situation.)

(3) Guaranteeing individual learning in TaRL activities

Many activities were observed in this survey which went as far as group activities, but did not go down to the level of individual exercises or activities. It is conjectured that many of these cases were due to a lack of teaching materials, but even in these cases it would have been better to ensure activities reached individual study as far as is possible. Consequently, it is worth considering including production of teaching materials within the activities. For example, have activities such as creating number charts to reinforce writing numbers, or to have students complete an addition chart with two lines a day, and master addition as TaRL activities or practice exercises. This will eventually enable each learner to have a chart, and this can be tied together with ensuring individual learning.

(4) Methods for checking answers

In this survey two methods for checking answers were observed. One is to nominate a child and confirm the whole answer on the blackboard, and the other is the more traditional method of having a facilitator walk around desks, and check answers and give individual instruction on a one to one basis.

With the first method, some cases were seem where mistakes were left without being corrected or reworked, but on the other hand, it was also possible to understand the reality that it is difficult to check every child due to the large number of students. It is very difficult to get learners to acquire the habit of checking answers collectively and then reviewing and reworking individually on their own. Therefore, although it depends on the number of participants in remedial lessons, the number of facilitators, and the number of classrooms, basically answers are checked with students on a one to one basis, and if that is difficult answers are checked together on a blackboard. When checking answers, it is necessary to establish rules, such as doing corrections with a red pen rather than a pencil, having students exchanging notes with each other and answer exercises together, having facilitators check this step (giving praise if possible, and guidance if it isn't possible), setting a time for reworking exercises, and having the students who finish early teach another students.

(5) Flexibility of level placement after testing

At some schools it was observed that the number of training days was short, and the test providers could not do tests according to the outline and class placement was not done well. In addition, during an interview with a facilitator, he pointed out his difficulties in teaching saying that there was a child who had slow comprehension, and the facilitator was having a hard time because he had no choice but to match that child's rhythm. Therefore, with the simple version, it may be necessary to take flexible action such as, for example, lowering practice exercises to a lower level if it is impossible to do more than half of them.

(6) Practice exercise types

There are basically structured from simple to difficult and are great, but the multiplication tables need to be analyzed from test results to see if the amount of practice exercises is sufficient.

(7) Analysis of how to give exercise problems

In this survey the program was already at a late stage so a judgement couldn't be made on this point, but even if it is difficult, the following options are possible.

Option 1: (Premise: learning among learners).

- Mark any problems you think were difficult.
- Rework questions that were answered incorrectly last time. (Children who gave correct answers to all questions support other children)
- Afterwards, do basic problems, medium difficulty problems and development problems collectively

Option 2: Do at different levels

- 3x3 module format

Basically the entire content is repeated over 3 days.

Day 1	Day 2	Day 3
1. Y (the day before yesterday's content) 2. Z (yesterday's content) 3. A (today's content)	1. Z (the day before yesterday's content) 2. A (yesterday's content) 3. B (today's content)	1. A (the day before yesterday's content) 2. B (yesterday's content) 3. C (today's content)

Option 3:

Create all of the problems for all levels in the training.

Option 4: Include everything within the implementation guide.

Ex.:

	1	2	3	4	5	6	7	8	9	10
A:	2 + 3 5	2 + 4 6	3 + 4 7	3 + 6 9	4 + 4 8	5 + 4 9	6 + 2 8	7 + 2 9	2 + 0 0	6 + 4 10
B:	9 + 3 1 2	9 + 5 1 4	9 + 6 1 5	8 + 4 1 2	8 + 6 1 4	8 + 7 1 5	7 + 6 1 3	7 + 8 1 5	6 + 6 1 2	5 + 9 1 4
C										
D										

(8) Internalization of follow-up activities

It's nearly impossible to do a program done perfectly with just two days of training activities, and there are also things that only come to light after you've actually done them. Consequently, it is crucial to internalize regular meetings between the ZAP director and principals into the strategy as a mechanism that enables continuous follow-up after the start of implementation, as seen in this survey.

Attachment 4 : Niger Trial Report

Report on Pilot Implemented to Improve Secondary Mathematics Education in Niger

1. Objective : Improve basic academic ability of learners through remedial lessons and other activities. In addition, clarify improvement points related to content and methods used to improve basic academic ability at secondary level through remedial lessons and other activities.

2. Implementation Content
   (1) Creation of Teaching Materials
   (2) Training of Teachers
   (3) Selection of School – Resident Meeting
   (4) Test
   (5) Trial (1 week)
   (6) Test Results

Summary

- The Structured Pedagogy / ESMATE type mathematics teaching method used during the trial was effective in improving basic academic ability in spite of the fact the period of teaching was short term (analysis of results provided on last page).
- While there are some areas where instruction is required on the teaching methods, the methods are easy for the teachers in Niger and have the potential for a high level of versatility.
- However, improvements need to be made to the content in preparation for dissemination. In particular, the fill in forms that were used this time need to be reviewed from the perspective of cost (decrease the size of the paper, use of notebook, etc.).

(1) Creation of Teaching Materials

Period: Latter part of January to beginning of March

Methods used in producing teaching materials: 1. ESMATE 2. Structured Pedagogy (SP) 3. PMAQ
Teaching principles and content from 1. ESMATE and 2. Structured Pedagogy were adopted. PMAQ Strategy related to learning time was used to secure sufficient learning time by having the school management committee implement the holding of remedial lessons.

Materials produced: Teacher facilitator guide, textbook for teachers, textbook for students, test

(2) Training of Teachers

Schedule: March 13 (lecture) / March 15 (participant simulation)
Training Instructor: Fukunaga
Training Venue: Subcontracted Office (ONEN)
Participants:

- Primary Facilitator: Mr. Jaharou IDI, 93936066 97936060 Zinder
- Facilitator 1: Mrs. Amadou Fati Souley, 96991961
- Facilitator 2: Mr. Hadi Bara Dan Tchidadé, 97382695

Day 1		
Time	**Activities**	**Actors**
8: 00 – 8: 10	Opening	Facilitator
8: 10 – 8: 30	1. Sharing strategies for improving academic	Facilitator

8: 30 – 9: 00	2. Explanation of the tools and the teaching methods - Discussions on successful teaching methods - Explanation of the tools	Facilitator
9: 00 – 9: 15	3. Explanation of the program	Facilitator
9: 15 – 10: 15	4. Explanation of the pilot program	Facilitator
10: 15 – 10: 30	Break	
10: 30 – 10: 45	5. Explanation of the test	Facilitator
10: 45 – 13: 00	6. Training on teaching technique	Facilitator
13: 00 – 14: 30	Lunch Break - Prayer	
14: 30 – 16: 00	6. Training on teaching technique	Facilitator
16: 00 – 16: 15	Preparation on the simulation by the Participants	Facilitator
16: 15	Closing	

Day 2		
Time	**Activities**	**Actors**
8: 00 – 8: 20	Opening and Recall of contents 1,2,3,4, and 5	participants
8: 20 –10: 30	Simulation by participants - Test - Activities	participants
10: 30 – 10: 45	Break	
10: 45 – 13: 00	Continuation of the simulation by the participants	participants
13: 00 – 14: 30	Lunch Break - Prayer	
14: 30 – 16: 30	Continuation of the simulation by the participants	participants
16: 30 – 17: 00	Confirmation of the planned schedule	
17: 00	Closing	

Reflection Points for Subsequent Activities

- Training consisted of holding two lessons and remedial lessons in complete form, and performing simulation for the lesson content (teaching content). However, the time used for practical teaching was too short, and the Teaching By Walking Around the classroom (TBWA) was not implemented in an appropriate manner.
- Therefore, instructions should be issued on the materials to be created at the end of the first day and instructions provided on simulation to facilitate preparation for the second day.

(3) Selection of School – Resident Meeting

Schedule: March 21 (Sunday)
School: Nordiré School
Details: Described in separate report
Selection Criteria: One school was selected in Niamey by subcontracted NGO (ONEN) that satisfied the condition of "School that can implement supplemental lesson activities during vacation and place where COGES-ES activities are lively" for DRES.

(4) Test

Schedule: March 17

Target: Lower secondary school 1st year (6eme) 428 students
Test giver: Teachers at lower secondary school which is target of trial
Selection criteria for supplementary lesson target: Students not able to adequately do 3 digit + 3 digit addition (Test consisting of three parts (First part: Addition up to 2 digit + 2 digit numbers [Problem 1-8]) (Second part: Addition up to 3 digit + 3 digit numbers [Problem 9-16]) (Third part: Comparison of numbers [Problem 17-20], Number line [Problem 21-24]) (Target students are those whose total in second part is 6 points or less).

Baseline Test Results:
The features of the basic academic ability of the students targeted for supplementary lessons determined from the results of the baseline test are shown below.

Fig. 1 Correct Answer Rate by 1st Year Lower Secondary School Students

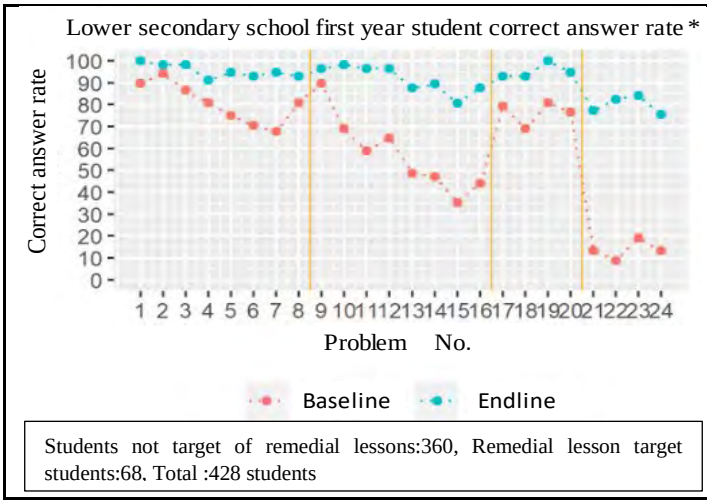
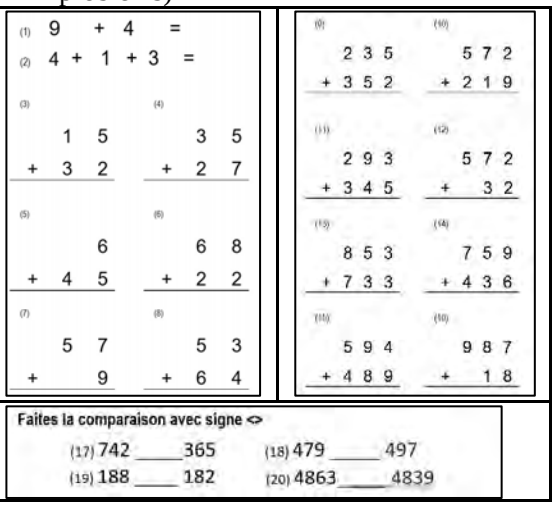


Fig. 2 Problems (Excluding 21-24 Number line problems)



- Students who are the target of supplementary lessons do not properly understand how to do calculation with carryover. Specifically, these students are not able to do addition which involves the carrying over of numbers in (1) and (3) in the first part. In particular, the results of addition were the worst for addition that includes a carryover and involves differing number digits in (7) (2 digit + 1 digit number).
- Students who are the target of supplementary lessons do not understand how to do 3 digit + 3 digit addition where the answer is a 4 digit number. In particular, the test results were the worst for problems that have a carry over for all positions as for (15), and the difference in the correct answer rate from students who are not the target of supplementary lessons was the largest.
- Regarding the comparison of numbers, the correct answer rate was similar among students who are the target of supplementary lessons and students who are not the target, with the correct answer rate being the lowest for the comparison of 3 digit number as in (18). In addition, there was almost no difference in the correct answer rate among students who are the target of supplementary lessons and students who are not the target for the comparison of 4 digit numbers in (20), with a figure of 80%. In other words, 20% of 1st year lower secondary school students have difficulty in comparing 4 digit numbers.

Appendix: Test used

Reflection Points for Subsequent Activities

- The expressions used in the test were tried out with one child and two teachers, and corrections were made to the expressions and other areas. However, when the test was actually given to 428 students, it was found that there were many students who did not understand the French expressions used, leading to the conclusion that more trials should be conducted in advance.
- Furthermore, when a histogram of the test results was created, it was clarified that the test quality was bad since there was not normal probability distribution due to a bias.
- As illustrated by the test results, due to the fact that number line problems are not understood even by students who are not the target of remedial lessons, there were issues with the quality of the problems and how to pose them.
- Regarding the grading of tests, since detailed consultations were not held with the subcontractor (ONEN) that prepared for this work, there were fluctuations in the grading criteria, and corrections needed to be made.

(5) Pilot (1 week)

Observation days : 1st day (March 24), 2nd day (March 25), 3rd day (March 26), 4th day (March 27), 5th day (March 29), 6th day (March 30)

Participants: Two trainers (Mrs. Amadou Fati Souley, Mr. Hadi Bara Dan Tchidadé), Main Instructor (Mr. Jaharou IDI, observer), CODES-ES representative (1 day), DDESNIAMYE5 (1 day)

Student attendance:

The overall participation rate was 80%, with 4 students not participating in the remedial lessons for even one day. The first day was the beginning of the vacation (day classes ended), and the students needed to come back to school after going home. Therefore, many students were not able to come back to school.

64 students	1st day	2nd day	3rd day	4th day	5th day	6th day	7th day	Overall
Participants	47	54	56	56	54	54	57	378
Percentage	73%	84%	88%	88%	84%	84%	89%	84%

Problems Clarified by Pilot and Improvement Points:

Throughout the entire pilot process, the facilitators seemed to be able to cope with the SP+ESMATE type teaching materials/methods that were introduced in this pilot activity, and it can be said that it is an effective approach that can be easily established in Niger. However, the improvements described in the table below need to be made in the future.

	Challenges	Improvement for Next Pilot	Item to be Corrected
Overall teaching process	• There is low understanding of the concept of creating teaching materials that can be used by anyone, and not enough exchange of opinions on methods to establish "structural/rule-based" teaching methods.	• Modify objective of training so that it is easily understood, and promote statements to enable structural/rule-based training.	• Explain the objective of the training in detail, and by putting focus on the rule-based training.
	• Teachers did not check the time in many cases, and even when they did, they were not able to measure the time correctly.	• Activities to measure the time during training, and measure the time during simulation.	• Training methods
	• Teachers often wanted to confirm content of previous day at beginning of class, but a lot of time spent on this resulted in the start of class being delayed.	• Set maximum time of 3 min., and have the only content reviewed being: 1. Topics for previous day, and 2. What were the steps.	• This portion should be incorporated in training and textbook should be changed.

	• Students were asked to contact other students who did not attend, but there were some students who did not come at all to the end.	• Manage attendance, continue having children contact other children who are absent, and enable attendance rate to be shared at Resident Meeting.	• Consider overall plan for remedial activities, including Resident Meeting.
	• Since management of attendance and materials was vague, the number of materials provided did not match the number of students attending.	• Distribute materials at beginning of class to check number of students, take attendance and collect materials at end of class to confirm.	• Implement similar measures for training. Include attendance record in textbook.
	• Quality of teaching by teachers was very low on first day, and corrections needed to be made.	• Will create patterns/simplify teaching methods in the future to increase in-class repeatability. In addition, discuss creation of simple table to be used by teachers for self-check after class.	
Blackboard	• Method used to write lesson on blackboard differed from textbook from first day, and was not consistent.	• Provide more strict rules for writing on blackboard during training. Additionally, use blackboard during training.	• Change training methods, and provide bad examples of writing on blackboard
Creation of Teaching Materials	• Consulted with teachers about preparing teaching materials in advance, but they were not prepared this time. However, it took a lot of time to write on the blackboard, resulting in a lot of time when the students could not do anything. In particular, size needs to be big enough for normal line portion so that it can be seen by the students.	• Provide details of teaching materials required for each part, and give instructions to facilitate the creation of such materials.	• Include in teacher guidebook
TBWA	• Teachers think that they should walk around classroom and approach desks to provide individual instruction, resulting in walking around all the time. In particular, they walk around even when students are answering. This makes it difficult to evaluate what individual students are doing.	• Simplify TBWA type teaching methods, and clarify “when teacher should approach desks to provide individual instruction”.	• Show bad example video during training, and what students are doing. In addition, put focus on TBWA methods during training.
	• Instead of evaluating and instructing the entire class, teachers respond to each student individually, and students other than the target students not having anything to do.	• Provide thorough instruction on methods for TBWA, and simplify methods.	• Show bad example video during training, and what students are doing. In addition, put focus on TBWA methods during training.

Answers	• Had students grade each other's papers when answers were given, but many students misunderstood answer given by teacher, or forgot the correct answer when grading.	• For answers: (1) If many students make mistakes, write several answers on blackboard, (2) If only a few make mistakes, verbally give answers, or (3) After verbally giving answers, have students exchange notebooks, and designate one student to repeat answers.	• Change training methods and teaching principle in textbook.
	• Many students did not have a red pen to mark the answers, and it took time for students to exchange pens with each other.	• Allow use of blue pens for answers, clearly mark incorrect answers, and write correct answer below that.	• Implement with training methods, and change instructions in teacher guidebook.
	• The answer methods used for confirm problems and practice problems in class are not uniform, and the process takes a long time.	• Answers in class should be: (1) Have students write answers to confirm problems in their notebooks, and designate one student with correct answer to confirm on blackboard. (2) For practice problems, answer should be given verbally by teacher as a basic rule.	• Implement with similar method during training, and change instructions in teacher guidebook.
	• Takes time for facilitator to give answers during remedial lessons, and students do not have anything to do during this time.	• Answers in class should be: (1) Collect notebooks from students who have finished the work, (2) Facilitator check answers with rounding, calls student when there is a mistake, and asks student to try to solve problem again, (3) Prepare materials for students that submitted notebooks in order to ask them to do other work, e.g. trying to write normal line or other such work.	• Clearly give answer 1-2 times during training. In addition, conduct simulation that includes checking when students try to solve problem for second time. Also prepare materials for students to perform other work.
Issues for Teacher Guidebook / Textbook	• French is long and difficult to understand.	• Change expressions in textbook so that they are easy to understand for students. Textbook Revision Workshop needs to be created to revise textbooks after they are created.	• Make changes to textbook.
	• Explanation by teacher is too long.	• Simplify content of problems since explanation by teacher is very long when problem is complicated.	• Give example of complicated problem and change. Also simplify steps in similar manner.

	• There were many students who did not understand problem given by teacher in French.	• Use standard format that is easy to understand for students, and unify language used by teachers. For example, “Ça fait combien au total?” and “La somme est combien?” can be used to ask the total in French, but the latter is difficult to understand for the students.	• Revise textbook and teacher guidebook, and try out with students before finalizing textbook.
	• There were portions where the answer and problem did not match, resulting in a lack of consistency in teaching. For example, only composing number was in answer, but decomposing was provided in practice problem.	• For portions that cannot be entirely covered with the answer, insert them at the edge of the textbook, and practice teaching during training using that portion.	• Revise textbook and teacher guidebook.
Other	• Having students contact / relay messages to absent students is not functioning well, and four students never attended supplementary lessons.	• Announce attendance rate at school management committee meeting. • Confirm which student will contact individual students who do not attend first day of supplementary lesson to make sure students are in touch.	

(6) Test Results

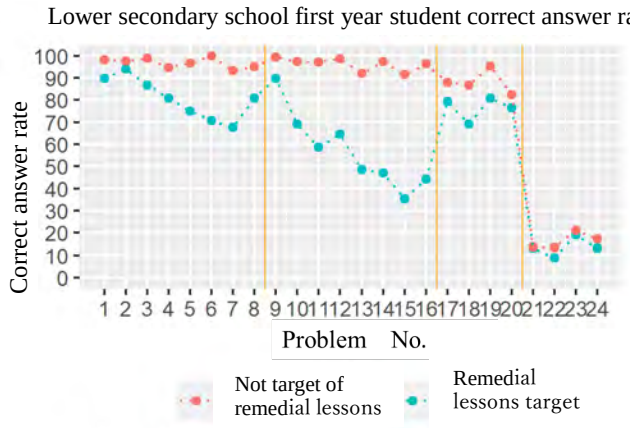
Test date: 7th day of supplementary lessons

Tested students: 57 (4 students did not participate in supplementary lessons, and 6 students were absent)

Test results:

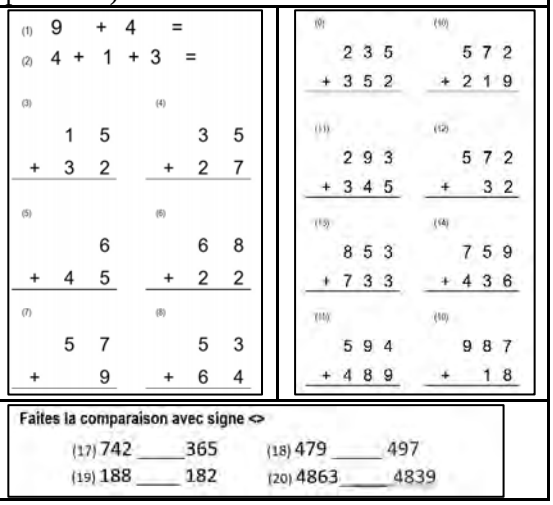
As shown in Fig. 3, the basic academic ability of students (addition, comparison of numbers, normal line) was dramatically improved by the supplementary lessons. That is to say, the SP / ESMATE type teaching method for math used during the trial was effective at improving academic ability in a short period of time.

Fig. 3 Effect of Intervention: Comparison of baseline and end-line correct answer rate for each problem



Number of baseline test takers 68:, number of endline test takers 57

Fig. 4 Problems (excluding 21-24 number line problems)



Lower secondary school first year student correct answer rate (for each problem, students who are not target of supplementary lessons / students who are target of supplementary lessons)

- Students who were the target of the supplementary lessons gained the ability to do addition with a carry over. The correct answer rate for addition of 2 digit + 2 digit addition problems (1-8) improved to over 90%. In addition, the level of understanding of addition of differing numbers of digits improved for (7) which had the worst correct answer rate in the baseline for the first part.
- At least 80% of the students that were the target of the supplementary lessons are now able to do 3 digit + 3 digit addition. Furthermore, the correct answer rate for problem (15) was under 40% in the baseline test, but the understanding of students improved so that the correct answer rate exceeded 80% in the endline test.
- Comparison of numbers (17-20) dramatically improved.
- Less than 20% gave the correct answer for normal line problems (21-24) in the baseline test, but the understanding of students improved so that the correct answer rate exceeded 70% in the endline test. This result far exceeds the correct answer rate of the students who were not the target of the supplementary lessons in the baseline test.

Attached Materials for Niger

WS Report for Pilot Implementation to Improve Secondary Mathematic Ability in Niger

Dec. 29, 2020

1. Implementation Overview

(1) Schedule: Dec. 9th, 10th 2020

(2) Participants: Hara, Suyama, Matsumoto, Minami, Fukunaga, Nakayama; Remote participants : Morimoto, Murakami, Nakazawa, Yagi

(3) WS Goal: Strengthen training and mathematics education ability to establish pilot model to improve academic ability of lower secondary school students in Niger

(4) WS Schedule:

Schedule	Time	Activities
Wednesday, Dec. 9	10:00 - 11:00	(1) Overview of ESMATE and formulating strategy to improve learning
	11:00 – 12:00	(1) Discussion of improvement strategy for learning in Niger
	12:00 – 13:00	Lunch
	13:00 – 13:30	(2) Teaching material drafting / draft program for Niger
	13:30 – 14:00	(2) Discussion about draft teaching materials / program for Niger
	14:00 – 14:30	(3) ESMATE training strategy
	14:30 – 15:00	(3) Discussion about training strategy for Niger
	15:00 – 15:30	(3) ESMATE training content
	15:30 – 16:00	(3) Discussion about training content for Niger
	16:00 – 16:30	(4) Points for creation of math teaching materials
	16:30 – 17:30	(4) Exercise for creation of math teaching materials
	17:30 – 18:15	(3) Instruction points for general teaching techniques for teachers
	18:15 – 19:00	(3) Discussion about general teaching technique content for teachers in Niger
Thursday, Dec. 10	8:00 – 9:00	Review of training content for Niger
	9:00 – 10:00	Discussion of teaching material page structure
	10:00 – 12:00	Review of program for Niger (30 days)
	12:00 – 13:00	Lunch
	13:00 – 14:00	7.2 Math systematic exercise
	14:00 – 16:30	Question and answer session, 8. Work / explanation on free range of themes, such as training preparations / creation of teaching materials / creation of tests / math content

2. Activity Details

(1) Overview of ESMATE, formulating strategy to improve learning and discussion of improvement strategy for learning in Niger

Explanations were made concerning an outline of the project ESMATE, project timeline and activities that had an impact on improving academic ability, encouraging counterparts, impact on improvement of academic ability, contributing factors for success and lessons learned. After this, explanations were provided concerning the formulation process for the strategy to improve learning of ESMATE using the three elements of “Learning time”, “Teaching materials” and “Learning support based on evaluation” as the analysis framework in order to improve learning based on such results as test results, classroom observation and interviews. Based on these explanations, this analysis framework was used to formulate the strategy in preparation for implementation in Niger with the following considerations.

- ✓ Analysis of academic performance level of graduates of elementary school in Niger (based on test results if available)
- ✓ Analysis of level of lower secondary school teachers
- ✓ Analysis of lesson process, learning process and learning content for lower secondary mathematics
- ✓ Analysis of learning time, lesson implementation rate, and observance status of course hours, time spent for proactive learning, etc.
- ✓ Analysis of complementary elements based on given conditions in Niger

The draft pilot plan discussed within this WS is described below.

Draft Pilot Plan for Niger

Target students: Selected based on test results of first year lower secondary school students in capital or suburbs (from lower level group)

Implementing party: Assumed to be local NGO in pilot

Pilot program : Assumed to be 7 days during Easter, two remedial lessons to be held by teachers per day, plus two remedial activities to be held by facilitators per day (Total : 28 hours)

Target subject: Elementary school math

Pilot model goal: Provide students with ability to do comparison of numbers and 3 digit addition

Distributed teaching materials: Learning materials (teaching materials that cover remedial lessons and remedial activities), Teacher guidebook for teachers / facilitators that complies with learning materials (examples of remedial lesson development using learning materials, answers, usage of blackboard and other details)

Training activities: Implemented 1 – 3 days for NGO

Tentative timeline: March 2021 Baseline test, results compiled, training of NGO and teaching materials printed

March 29 – April 4 2021 Pilot

April 2021 Pilot result analysis, results shared

(2) Teaching material drafting / draft program for Niger and discussion about draft teaching materials / program for Niger

Regarding the structure of ESMATE teaching materials, draft teaching materials structure and program for the pilot model were formulated, with a focus on a structure that matches teaching customs of local teachers and learning customs of students and does not place undue strain, taking into consideration the following points:

- ✓ Teaching material usage method : Write in type or lent out type
  Write in type: Easy to use, cost is an issue
  Lent out type: No problem for 4th year or higher grade students. Can be used by 3rd year students. Each student needs a notebook. Storage method is an issue.
- ✓ Whether or not to prepare teaching materials for teachers.
- ✓ Whether to use only in lesson, or to be used for learning at home.
- ✓ Whether students should take home as method used for storage.
- ✓ What to do about practice problems that were not finished during lesson.
- ✓ What to do when content is finished early.
- ✓ Number of pages: How many pages can be made with budget.
- ✓ Time allocation: Have two continuous sessions of 45 minutes for a total of 90 minutes, or to end classes in 45 minute increments. Setting a time for proficiency during the week?

- ✓ Whether or not to ask students to solve erroneous practice problems again as homework.
- ✓ How to set range of teaching content level. → Is 1 digit calculation needed? Are figures needed? Are decimal points and fractions needed?
- ✓ Whether or not to grade tests.
- ✓ Whether or not to give answers

The draft program discussed during the two day WS is shown below. The draft teaching material structure is attached to (4).

Program to Strengthen Academic Ability of Lower Secondary School Students in Niger (draft), Dec. 29, 2020 ver.

No.	Lesson Content	Remedial Lesson Content	Evaluation Problem	ESMATE Textbook Page
1-1	Numbers 0 to 10, Composing and decomposing	Numbers 0 to 10, Composing/decomposing, stick counting	□ with 2 and 8	LT1.Tomo 1 P38~P48 (45, 46)
1-2	1 digit + 1 digit, no carry over	1 digit + 1 digit, no carry over, with sticks	3 + 4	LT1.Tomo 1 P58~P72 (63, 64)
2-1	Numbers 10 – 20 Composing/decomposing	Numbers 10 – 20 Composing/decomposing	□ with 10 and 6	LT1.Tomo 1 P104~107 118~121
2-2	Calculation of 3 □	Calculation of 3 □	7 + 3 + 6	LT1.Tomo 1 P91, 92
3-1	1 digit + 1 digit, with carry over	1 digit + 1 digit, with carry over, with sticks	9 + 4	LT1.Tomo 1 P122~136 (122, 123)
3-2	Numbers to 100, number composition	Numbers to 100, number composition, stick counting	Write 37 from quantity	LT1.Tomo 2 P24~33 (24,25)
4-1	2 digit + 2 digit, no carry over	2 digit + 2 digit, no carry over	15 + 32	LT1.Tomo 2 P64~71 (64,65)
4-2	2 digit + 2 digit, with carry over	2 digit + 2 digit, with carry over	18 + 24	LT2.Tomo 1 P54~57 (54,55)
5-1	Numbers to 10000, number composition	Numbers to 10000, number composition	Write 4,658	LT2.Tomo 1 P16~31 LT3, P13,14,15
5-2	Number comparison (quantity, code, place keeping)	Number comparison (quantity, code, place keeping)	479>497 comparison	LT2.Tomo 1 P42, 43
6-1	Number line	Number line	Write 38 on number line	LT1.Tomo 1 P111 LT1.Tomo 2 P43~48
6-2	3 digit + 3 digit, no carry over	3 digit + 3 digit, no carry over	235+352	LT2.Tomo 1 P68, 69
7-1	3 digit + 3 digit, with carry over	3 digit + 3 digit, with carry over	293+345	LT2.Tomo 1 P70~78 (73, 74)
7-2	2 digit + 2 digit = 3 digit, 3 digit + 3 digit = 4 digit	2 digit + 2 digit = 3 digit, 3 digit + 3 digit = 4 digit	53+64	LT2.Tomo 1 P54~64, P79~80, (58,59)
8-1	1 digit – 1 digit, no borrowing	1 digit – 1 digit, no borrowing	9 – 6	LT1.Tomo 1 P73~82 (75, 76)
8-2	2 digit – 1 digit, with borrowing	2 digit – 1 digit, with borrowing	12 – 9	LT1.Tomo 1 P151~157 (151, 152)
9-1	2 digit – 1 digit, with borrowing	2 digit – 1 digit, with borrowing	13 – 6	LT1.Tomo 1 P151~157 (155, 156)
9-2	2 digit – 2 digit, no borrowing	2 digit – 2 digit, no borrowing	48 – 35	LT1.Tomo 2 P74~86 (74,75)
10-1	2 digit – 2 digit, with borrowing	2 digit – 2 digit, with borrowing	52 – 29	LT2.Tomo1,P106,107, 110, 111 (106,107)
10-2	2 digit – 2 digit, with borrowing	2 digit – 2 digit, with borrowing	36 – 28	LT2.Tomo1 P108~109
11-1	Multiplication table (Level 1 to 5)	Multiplication table (Level 1 to 5)	4 x 6	LT2.Tomo2 P12~28,
11-2	Multiplication table (Level 6 to 9)	Multiplication table (Level 6 to 9)	6 x 7	LT2.Tomo2 P48~67,

12-1	Multiplication table (Summary)	Multiplication table (Summary)	8 x 7	LT2.Tomo2 P12~28, LT2.Tomo2 P48~67,
12-2	2 digit × 1 digit	2 digit × 1 digit	21 x 3	LT3, P68
13-1	2 digit × 1 digit	2 digit × 1 digit	24 x 3	LT3, P69,70,71
13-2	2 digit × 1 digit	2 digit × 1 digit	28 x 6	LT3, P69,70,71
14-1	2 digit × 2 digit	2 digit × 2 digit	23 x 24	LT4, P58
14-2	2 digit × 2 digit	2 digit × 2 digit	63 × 28	LT4, P58
15-1	Division without remainder	Division without remainder	18 ÷ 6	LT3, P98,99
15-2	Division without remainder	Division without remainder	36 ÷ 9	LT3, P100,101,102
16-1	Division without remainder	Division without remainder	48 ÷ 8	LT3, P103,104
16-2	Division with remainder	Division with remainder	21 ÷ 6	LT3, P105,106
17-1	Division with remainder	Division with remainder	25 ÷ 6	LT3, P107,108
17-2	2 digit ÷ 1 digit	2 digit ÷ 1 digit	46 ÷ 2	LT4, P84,85
18-1	3 digit ÷ 1 digit	3 digit ÷ 1 digit	486 ÷ 2	LT4, P87,88
18-2	3 digit ÷ 1 digit	3 digit ÷ 1 digit	992 ÷ 4	LT4, P89
19-1	2 digit ÷ 2 digit	2 digit ÷ 2 digit	65 ÷ 21	LT4, P95,96
19-2	2 digit ÷ 2 digit	2 digit ÷ 2 digit	71 ÷ 28	LT4, P97
20-1	3 digit ÷ 2 digit	3 digit ÷ 2 digit	584 ÷ 25	LT4, P99
20-2	3 digit ÷ 2 digit	3 digit ÷ 2 digit	275 ÷ 82	LT4, P100
21-1	Calculation rules	Calculation rules	3 x (4 + 6)	LT3, P166,168
21-2	Calculation rules	Calculation rules	4 + 6 x 5	LT3, P169,170
22-1	Calculation rules	Calculation rules	25x3+25x1=25x(3+1)	LT4, P113,114
22-2	Rounding off, round numbers	Rounding off, round numbers	Rounding off 3847 to round number in 100s	LT3, P22~24
23-1	Multiple	Multiple	Write 5 multiples of 4, starting with smaller	LT5, P12
23-2	Least common multiple	Least common multiple	Write least common multiple of 4 and 6	LT5, P13~15
24-1	Divisor	Divisor	Write all divisors of 12	LT5, P16
24-2	Greatest common divisor	Greatest common divisor	Write greatest common divisor of 12 and 18	LT5, P17~19
25-1	Types of shapes, such as triangles and quadrangles	Types of shapes, such as triangles and quadrangles	Sort triangles	LT2,Tomo2 P88~91
25-2	Corners, angles	Corners, angles	Recognize right angle	LT3, P48 LT4, P22~27
26-1	Parallel and vertical	Parallel and vertical	Recognize two sets of parallel sides	LT3, P50~53
26-2	Sorting of triangles	Sorting of triangles	Sorting of isosceles triangles	LT3, P84~87
27-1	Sorting of quadrangles	Sorting of quadrangles	Recognize parallelogram	LT4, P33~43
27-2	Area of squares, rectangles	Area of squares, rectangles	Calculate area of rectangle. 3 x 4	LT4, P119, 120,121
28-1	Area of parallelogram	Area of parallelogram	Calculate area of rectangle. 5 x 6	LT5, P119,120
28-2	Area of triangles	Area of triangles	Calculate area of rectangle. 3 x 4 ÷2	LT5, P122,123
29-1	Circle	Circle	Calculate radius of circle with 6cm diameter.	LT3, P55~57
29-2	Area of circle	Area of circle	Calculate area of rectangle. 3 x 3 x 3.14	LT6, P123,124
30-1	Conclusion	Conclusion		
30-2	Conclusion	Conclusion		

(3) Discussion/formulation of ESMATE training strategy/content for Niger

Explanation of the issues that were discussed during formulation as the circumstances and background for formulation of the ESMATE training strategy was performed, the points when formulating the training content and strategy that can be implemented according to those conditions were explained, after which the individual training content was explained. The training content for Niger based on these explanations was then discussed. The results of discussions are described below.

Draft Pilot Training Plan for Niger

No.	Training Content	Detailed Content
1	Sharing of principles (sharing of learning improvement strategy)	Sharing of baseline test results, analysis of 3 elements of learning improvement, activities to increase learning time, sharing of strategy concerning teaching materials.
2	Explanation concerning quality improvement of teaching and teaching materials	Present a learning pattern where student learning time is short as a lesson pattern, hold a discussion, and indicate examples of lesson development to be aimed for during this pilot. After this, share teaching material structure in accordance with that lesson pattern. In addition, explain the composition of teacher guidebook created that matches the teaching materials.
3	Program to help increase learning time	Explain pilot program and remediation time.
4	Teaching techniques	Explain to the teachers how to use blackboard and TBWA as minimum technique needed to implement remedial lessons and remedial activities.
5	Simulation of remedial lessons and activities	Perform simulation of remedial lessons and activities while using actual textbook and teacher guidebook.

(4) Points for creation of math teaching materials and exercise for creation of math teaching materials

Supplementary teaching materials for Niger were created and exercises relating to those materials were performed with a focus on the following points.

1. Determine goal
   - Children are able to _____ (simple goal).
   - Children are also able to do _____ by means of _____.
2. Determine problems to be introduced (exercises)
   - Problem related to events in life, or math problem.
3. Determine practice problems
   - Do problems match goals?
   - Difference in difficulty from exercise
   - Selection of easy value
   - How to use patterns for practice problems
   - From simple problems to more difficult problems
4. Think about final summary (steps to follow)
   - Use language that is easy to understand for children.
   - Think of a step that, if followed, will solve the problem.
   - Share steps in a variety of patterns if possible (with minimum of steps to be memorized)

Draft plans for teaching materials and a teacher / facilitator guidebooks that were created through practice

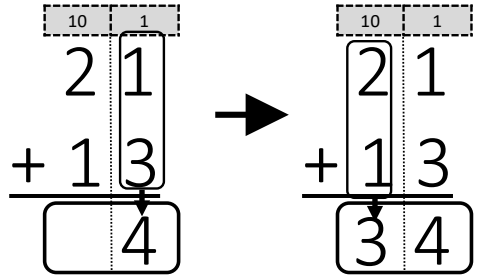
are presented on the following pages. Teaching materials are based on a two-page layout with the same content, with the remedial lesson content to be used by the teacher on the left page, and the remedial activity content that is to be used by the facilitator on the right page. Guidebooks for teachers / facilitators will have detailed instructions for remedial classes on the left side based on Structured Pedagogy, and present a blackboard plan at the end of the guidebook. Measures on the right page are implemented for other facilitators so that the same instructions can be given for all remedial activities as a basic role to minimize the burden on the facilitators, and the same type of practice problems that were handled in the remedial lesson are set up except for a portion of the TaRL activities.

Furthermore, due to the fact that work efficiency for the creation of the pilot teaching materials for Niger based on ESMATE teaching materials was found to be the highest during the experience of creating materials during this exercise, work on the creation of teaching materials will proceed while referring to the corresponding pages of the ESMATE textbook in the draft program described on this report.

Left side page in textbook (used by teachers)

Today's goal 7 : Let's learn how to do 2 digit + 2 digit addition !

See how to calculate 21+13

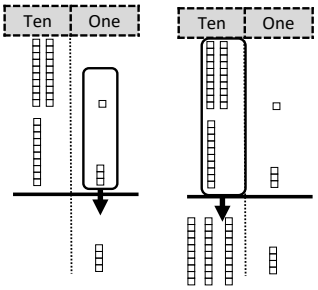


This is called "column calculation".

Step 1: Add the 1's column.

Step 2 : Add the 10's column.

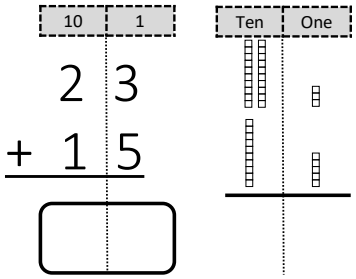
Check with the blocks.



Step 1: Add the 1's column.。

Step 2 : Add the 10's column.

Check Problem : Calculate 23+15



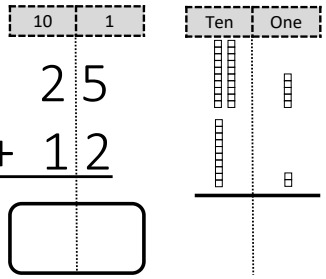
Step 1 : Add the 1's column.

Step 2 : Add the 10's column.

Practice Problem

1. Do the following calculations

①



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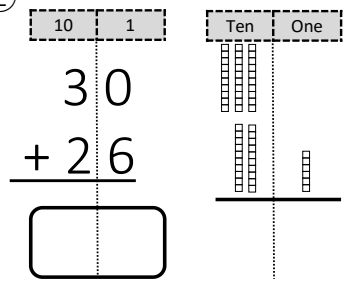

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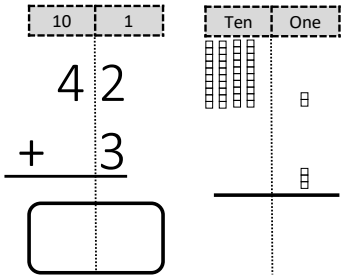
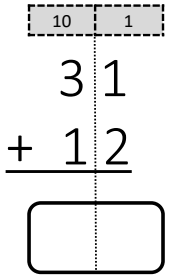
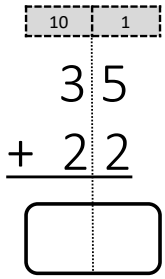


2. Calculate without blocks

①



②



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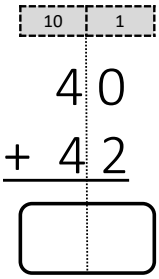
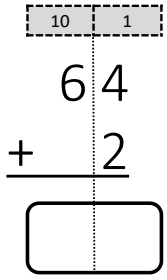


④



Right side page in textbook (Used by facilitators)

Master goal 7 : Let's master how to do column calculation

Practice Problem

1. Do the following calculations

① 10 | 1 — 2 3 + 1 2 = ☐☐ ; Ten | One

② 10 | 1 — 3 2 + 2 4 = ☐☐ ; Ten | One

③ 10 | 1 — 4 1 + 3 4 = ☐☐ ; Ten | One

④ 10 | 1 — 2 0 + 4 2 = ☐☐ ; Ten | One

⑤ 10 | 1 — 3 2 + 6 = ☐☐ ; Ten | One

⑥ 10 | 1 — 4 + 5 2 = ☐☐ ; Ten | One

2. Calculate without blocks

① 10 | 1 — 3 5 + 1 3 = ☐☐

② 10 | 1 — 3 2 + 5 6 = ☐☐

③ 10 | 1 — 5 3 + 4 2 = ☐☐

④ 10 | 1 — 2 4 + 6 2 = ☐☐

⑤ 10 | 1 — 3 1 + 1 5 = ☐☐

⑥ 10 | 1 — 3 3 + 2 0 = ☐☐

⑦ 10 | 1 — 5 0 + 2 0 = ☐☐

⑧ 10 | 1 — 6 0 + 3 2 = ☐☐

⑨ 10 | 1 — 3 1 + 6 = ☐☐

⑩ 10 | 1 — 3 5 + 4 = ☐☐

⑪ 10 | 1 — 4 + 5 2 = ☐☐

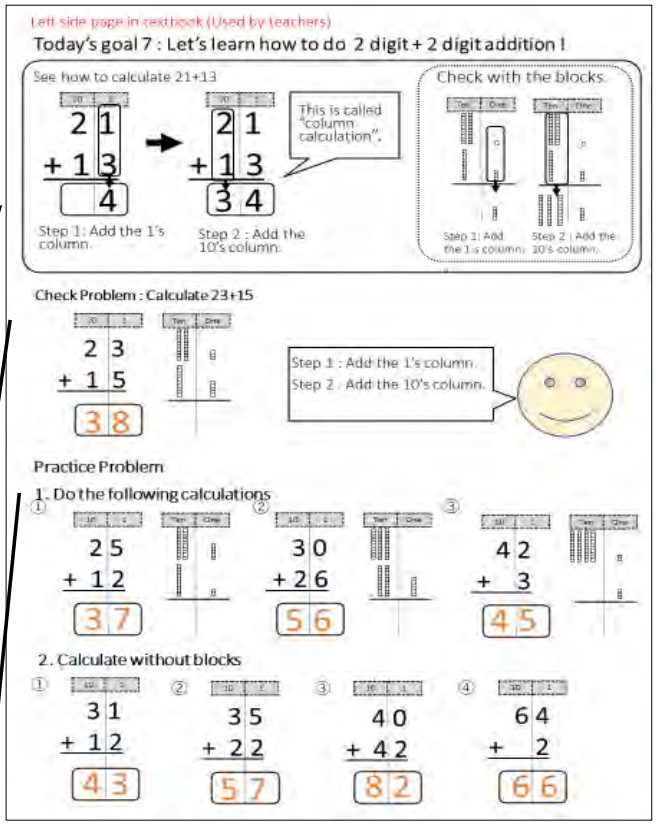
⑫ 10 | 1 — 6 + 7 3 = ☐☐

Left side page in textbook (Used by teachers)

Lesson goal 7 : Understand how to do 2 digit + 2 digit / 1 digit column addition without carry over.

Teacher : “Let’s read today’s goal”.
Students : “Learn how to do 2 digit + 2 digit addition”. (2 minutes)

Teacher : “Let’s think about how to calculate 21+13. (Write column calculation of 21+13 on blackboard.) Add the numbers in each column. In Step 1, add the numbers in the 1’s column. What numbers do you add ?”.
Students : “1 and 3”.
Teacher : “In Step 2, add the numbers in the 10’s column. What numbers do you add ?”.
Students : “2 and 1”.
Teacher : “That’s right. So that answer is 34. Calculating the numbers in the vertical columns is “column calculation”. Now let's summarize the steps. What did you do in step 1 ?”.
Students : “We added 1 and 3 in the 1’s column.”.
Teacher : “And what did you do in Step 2?”.
Students : “We added 2 and 1 in the 10’s column.”.
Teacher : “Let’s read Step 1 and Step 2 three times so that we remember them.”
Students : Read (10 minutes)



Check Problem :

Teacher : “Now I would like to have each of you do the check problem. You have 3 minutes.” (Write calculation of 23+15 on blackboard.)
Students : “Each student adds 23 and 15”.
Teacher : (Teacher goes from desk to desk to see how students are doing. When they cannot do a problem, tells students to ask one another or think about problem using blocks)
“Now let’s check on the blackboard”.
Student or Teacher : Writes answer on blackboard.
Teacher : “The answer is 38. Circle the answer if it is correct, and write the correct answer beside it if the answer is wrong. Do you know how to do addition now? What did you do in Step 1?”.
Students : “We added the 1’s column
Teacher : “And what did you do in Step 2?”.
Students : “We added the 10’s column”.
Teacher : “That’s right. Let’s practice so you know how to do it”. (8 minutes)

Practice Problem

Teacher : “Now let's do Practice Problem 1 by yourself. Please bring your paper when you finish problem (1), (2) and (3). I will circle the correct answers. When you make a mistake, try to solve the problem again. Proceed to Practice Problems 2 when all problems are circled. Students who get the correct answers for all problems first should help other students. But don’t tell them the answer.”
Students : (Do practice problems)
Teacher : (Teacher goes from desk to desk to see how students are doing. When they cannot do a problem, tells students to ask one another or sing blocks. Circles correct answers. Explains problems on blackboard for problems for which there are many wrong answers) (25 – 40 minutes)

Key points for this lesson time

- Make students aware of how columns should be added.
- Is not a big issue if adding is done from 10’s column, but if there is a carry over from 1’s column, this decreases efficiency, so tell students they should add from 1’s column.
- If students have trouble doing addition for 42+3 and 64+2, rewrite as 42+03 and 64+02.
- If a student who finishes early tells the other students the answer, instruct them to teach the procedure (thinking), rather than giving answer.

Right side page in textbook (Used by facilitators)

Supplementary lesson goal 7 : Learn how to do 2 digit + 2 digit / 1 digit column addition without carry over.

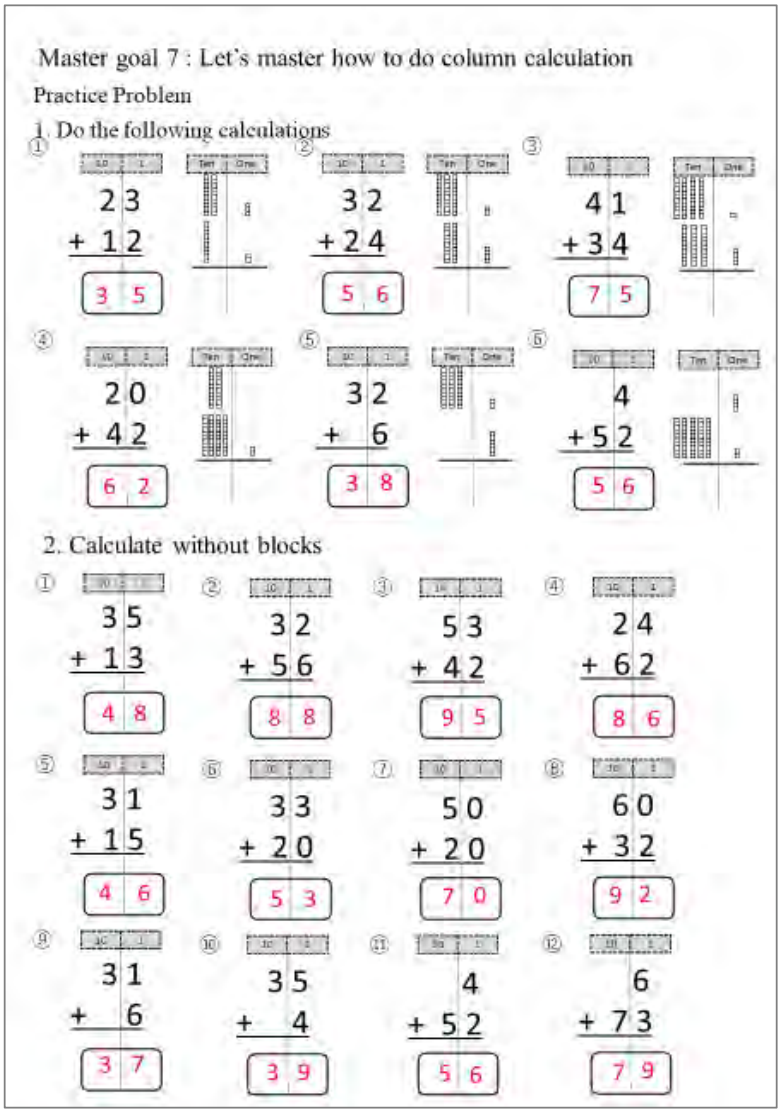
Facilitator : "Let's read the master goal for today."

Students : "We will master how to do column calculation."

Facilitator : "You learned how to do column calculation on the left side page. Let's do some practice problems using the same procedure as on the left side page. First do problems (1), (2), (3), (4), (5) and (6) in Practice Problem 1, then bring your paper when you finish. I will circle the correct answers. When you make a mistake, try to solve the problem again. Proceed to Practice Problems 2 when you answered all the questions correctly. Students who get the correct answers for all problems first should help other students. But don't tell them the answer."

Students : (Do practice problems)

Teacher : (Teacher goes from desk to desk to see how students are doing. When they cannot solve a problem, tells students to ask one another or think about problem using blocks. Circles correct answers.)



Master goal 7 : Let's master how to do column calculation

Practice Problem

1. Do the following calculations

① 23 + 12 = 35 ② 32 + 24 = 56 ③ 41 + 34 = 75

④ 20 + 42 = 62 ⑤ 32 + 6 = 38 ⑥ 4 + 52 = 56

2. Calculate without blocks

① 35 + 13 = 48 ② 32 + 56 = 88 ③ 53 + 42 = 95 ④ 24 + 62 = 86

⑤ 31 + 15 = 46 ⑥ 33 + 20 = 53 ⑦ 50 + 20 = 70 ⑧ 60 + 32 = 92

⑨ 31 + 6 = 37 ⑩ 35 + 4 = 39 ⑪ 4 + 52 = 56 ⑫ 6 + 73 = 79

Types of Practice Problems :

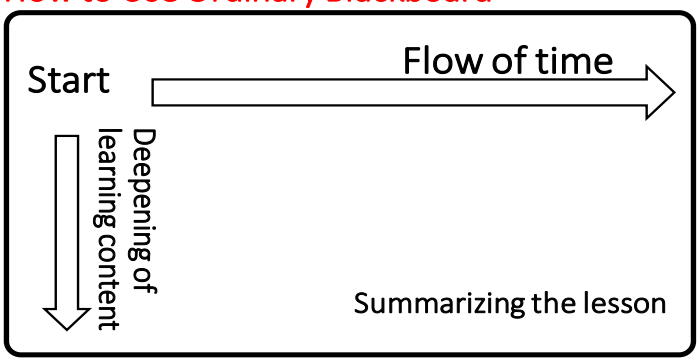
Practice Problem 1 contains problems that can be solved while checking blocks. Problems (1) – (3) are 2 digit + 2 digit regular type without carry over. Problem (4) is addition that includes a 0. Problem (5) and (6) are addition of 2 digits and 1 digit. Practice Problem 2 contains problems that enable students to master the column calculation. Problems (1) – (5) are 2 digit + 2 digit regular type without carry over. Problems (6) – (8) are addition that includes a 0. Problems (9) and (12) are addition of 2 digits and 1 digit.

Key points for this lesson time

- Make students aware of how columns should be added.
- Teach procedure : Step 1 (Add 1's column), Step 2 (Add 10's column.)
- Is not a big issue if adding is done from 10's column, but if there is a carry over from 1's column, this decreases efficiency, so tell students they should add from 1's column.
- If students have trouble doing addition for 42+3 and 64+2, rewrite as 42+03 and 64+02.
- If a student who finishes early tells the other students the answer, instruct them to teach the procedure (thinking), rather than giving answer. The students who have finished with correct answers for all questions may be asked to circle correct answers for other students.

(Blackboard plan (presentation at the end of the book))

How to Use Ordinary Blackboard



The blackboard is like a shared notebook for the teacher and students. Give instructions to leave all items on blackboard without erasing them so that the things learned during the day can be reviewed at the end of the lesson.

How to use blackboard with these teaching materials

Date 2021/04/02

Goal :○×△

First Problem

Summary

Check Problems

Practice Problems

Explanation of Problems for which many wrong answers were given

Usage example of blackboard for goal 7

2021/04/01

Goal 7 : Let's learn how to do 2 digit + 2 digit addition

Let's learn how to calculate 21+13

	10	1
	2	1
+	1	3
	3	4

Step 1 : Add 1's column

Step 2 : Add 10's column

Let's calculate 23+15

	10	1
	2	3
+	1	5
	3	8

Practice Problems

Use this space to explain problems for which many wrong answers were given.

End

Attachment 5-1: Malawi Trial Report

(Preparation)

Development and Scale-up of Improving Children's Learning Model through Community Participation in the African Region
Field Survey Report for the introduction of Pilot Activities in Malawi

1. **Researchers** : Masahiro HARA, Teruyuki FUKUNAGA, Mayu MINAMI (Asuka World Consultants Co., Ltd.)
2. **Period** : HARA: Friday June 11 to Thursday June 24, 2021 (14 days)
   FUKUNAGA and MINAMI : Sunday June 13 to Tuesday July 13, 2021 (31 days)
3. **Destination** : Malawi (Elementary school near Lilongwe)
4. **Work Places** : Ministry of Education, Science and Technology, Elementary schools, Training sites in Lilongwe
5. **Work Purpose** : Preparing for the implementation of pilot activities for the Community Participation Education Development Project
6. **Work Details** :

6-1. Survey Background

The objective of these project activities is to develop and verify effective approaches for Malawi to "Improve academic performance based on the 'School for All' model" as project research. In the survey conducted in April with this objective, the necessity of introducing the 'School for All' approach in Malawi was clarified. Effective implementation methods for the "School for All" approach in Malawi were studied during this field survey.

6-2. Survey Schedule

Sunday June 13 to Tuesday July 13, 2021

6-3. Summary of Survey Results

The following issues were identified for effective implementation methods for the 'School for All' approach during this field survey.

- There is a high possibility that the PTA (SMC) is not functioning in Malawi, creating the need for PTA democratic elections, and a high level of demand for this. Experience during pilot activities indicates that the judgment can be made that implementation of democratic elections is possible, but improvements are necessary for the methods used in accordance with the circumstances at schools in Malawi.
- The problem of the low academic ability of students in Malawi is very serious, creating an extremely high need to improve academic performance. There is high potential that an action plan that incorporates academic ability improvement activities, an academic ability improvement model and financial management model can produce results, but improvements need to be made in the future that match the circumstances in Malawi, and progress needs to be made on the development of teaching materials to improve academic abilities of Malawian students at an early point in time.

6-4. Survey Overview

(1) Introduction Training for 'School for All' Foundation Model (June 17 – July 8)

The 'School for All' foundation model consists of training for school principals, "democratic election training" enabling democratic reform of the SMC or PTA which plays the role of connecting residents and schools, promoting the sharing of information by members of the reformed organizations with residents and schools, planning and implementing appropriate improvement activities, and training for the strengthening of the implementing capability of "action plans" that reinforce financial management.

The characteristics of the foundation model introduction training that was conducted during this field survey in Malawi are that the PTA was chosen as the intervention organization instead of the SMC, and that the interval between the regular election training and the action plan was shortened from the usual one month to about two weeks, taking into account the preparation period for holding democratic elections. The reason that the interval was shortened was to allow the Japanese consultants to directly monitor the democratic elections at each school and also to conduct "activity training". Consequently, it was confirmed that elections were implemented without any problems at schools where intervention was performed, and direct training was performed to strengthen the capabilities of the officers who were selected by those elections. The details of training and status of monitoring will be attached, but on the whole, the understanding level of training participants was high, and the effect of training was proven with the implementation of successful activities (refer to Appendix 1 for the respective training activities that were implemented).

(2) Monitoring Survey Concerning Elementary Education in Malawi

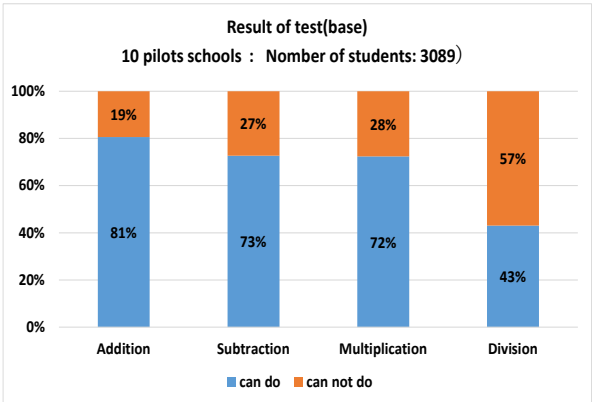
A monitoring survey of schools was conducted in preparation for implementing of the 'School for All' model, and the following things were clarified (refer to Appendices 3 and 4 for details).

Regarding the learning environment, the number of classrooms, teaching materials and other resources are inadequate for the large number of students, and how to implement activities to improve learning in light of these circumstances needs to be carefully considered. As for the SMC and PTA, it was found that, unlike the literature review, the SMC and PTA were not functioning properly because the members of each organization were composed in such a way that they did not overlap, and because some schools did not appoint new members after a member quit. Regarding the school activity plans, it was clarified that activity plans have been created at different schools up to this point in time, and that there are few obstacles for the formulation of action plans to implement learning improvement activities due to the fact that test printing expenditures are high. Notably, remedial lesson activities are being implemented by many schools during or outside of class time, and there is a low level of difficulty to integrate remedial activities in the action plan.

Regarding attendance of school by girls, interviews were conducted with the Foreign, Commonwealth and Development Office (FCDO) in Malawi and NGOs that are implementing activities to promote the attendance of girls in schools with a special focus on improving life skills, and target schools were visited. Many girls drop out of elementary school in the late elementary grades as a result of an early pregnancy / marriage, so there is a high level of significance of intervention in those cases. In addition, there is a high possibility that effective intervention can be performed by involving the community through the 'School for All' approach.

(3) Preparatory Meeting for Learning Improvement Model In Math (July 9)

The high level of necessity of improving basic academic ability in Malawi was clarified by the results of the baseline tests that were conducted at the pilot schools starting on June 22 (diagram on right). Five intervention schools were selected based on these results, and training will be implemented for the learning improvement model in math in August. A preparatory meeting concerning the teaching principles / methods was conducted on July 9 that was attended by four trainers from the Ministry of Education, Science and Technology in preparation for implementation. The participants in



the preparatory meeting expressed their positive assessments concerning the ESMATE/SP techniques that are being introduced during this pilot activity by stating “teaching techniques are all systematically well organized” and “it is easy for students to understand”.

However, since this training included teaching techniques that differ from those normally used by the participants, there were many cases in which teachers focused on individually dealing with students rather than holistic management, and went back to their previous teaching habits. Therefore, during the training in August, the emphasis will be on helping participants to grasp the teaching principles in a clear and understandable way, and ensuring that there is time to reproduce them. In addition, since the terms used need to be revised to match the context in Malawi, a manual / guidebook will be prepared in the future, and the content will be finalized after sharing with the participants of this training (Refer to Appendix 4 for details).

6-5. Comments

(1) Possibility of Introducing ‘School for All’ Model in Malawi

It may be hasty at this point of time to discuss the success or failure of introducing the ‘School for All’ model or academic ability improvement model in Malawi. However, the judgment can be made that the potential for success is high when comparing with circumstances when the ‘School for All’ was introduced at schools in other countries in the past, and looking at the level of understanding of the training content by the participants (teachers, involved parties at each school) and progress of actual activities (democratic elections).

(2) Problems at PTA and SMC (intervention organizations)

The SMC or PTA (or other guardian association) is the organization that connects the residents, guardians and schools, as in other countries in Africa where the ‘School for All’ model has been used for intervention up until now. In Malawi, SMCs (School Management Committees) have been formally established after PTAs in the same manner as for other countries. In particular, SMCs that have been established as a means of receiving subsidies are an integral part of decentralization policies in the field of education. In light of this background, SMCs in Malawi which are comprised of members that represent involved parties at schools have the similar feature of SMCs in other countries of being planned for the receipt of school subsidies. Furthermore, it is expected that many SMCs are not functioning in Malawi judging from examples in other countries since considerations have not been implemented to make the organization function. If there is the opportunity for full-fledged intervention in the future, differing from these pilot activities, efforts should be made to revitalize school management with a focus on reform of SMCs, but in order to determine how SMCs will be reformed, it will be necessary to investigate into current conditions and country-specific legal requirements, as well as to hold adequate discussions with the Ministry of Education, Science and Technology based on the results of this pilot project. Before these discussions are held, it will be appropriate to provide such explanations as “Improving learning by children through cooperation between communities and schools” as the objective of ‘School for All’.

(3) Potential of Academic Ability Improvement Model for Many Students at Each School

Many involved parties (for example, administrative vice minister, Education Specialist at the World Bank) have pointed out that the extremely large number of students per classroom (average exceeding 100 students per classroom) is the most serious factor that inhibits improvement of the academic ability of students in Malawi. At another conference, one of the researchers stated that the above reason was the cause of a USAID project in Malawi not obtaining favorable results when it used the same method as a project in Kenya which was extremely effective. To address this issue, this pilot project will combine homework assignments with the implementation of remedial lessons through community participation, a well-established method of ‘School for All’, and support for these remedial lessons. There will be a focus on whether or not this new technique will produce results.

(4) Potential of Cooperation with World Bank

During this mission, Adama Ouedraogo, the Education Specialist at the World Bank with whom the survey team had meetings has worked in Niger for a long time, and he played a great role in the

considerable success of cooperation in two projects during that period, consisting of funding of foundation model rollout in Niger and funding for dissemination of PMAQ (Minimum Package for Quality Learning). Adama Ouedraogo has a deep knowledge of the 'School for All' technique, and gives it a high rating. Currently, his position in Malawi differs from that in Niger, and it was explained that the World Bank's plans are also based on the programs that can be made possible through partnership with other donors, but there is a possibility of some type of cooperation in the future, and it is important that opportunities be provided for the ongoing sharing of information.

Appendix 1. Training Overview for 'School for All' Foundation Model

1) PTA Democratic Election Training (June 17 – 21)

Teacher Training	
Schedule	June 17th / 18th
Venue	Sagecoa Golden Peacock Hotel
Objective	Preparations for acquiring means to select PTA by democratic elections and school training
Trainers	Minami, Fukunaga
Participants	Approx. 20 involved persons at MoEST (Inspectors, C. PEA, PEA etc.)
School Training	
Schedule	June 21st
Objective	Acquiring means to select PTA by democratic elections
Trainers	Approx. 20 involved persons at MoEST
Participants	Ten principals at 10 pilot target schools

2) School Activity Plan / Financial Training (July 1st – 8th)

Teacher Training	
Schedule	July 1st, 2nd, 5th
Venue	Crossroads Hotel
Objective	Acquiring activity plan formulation methods to improve quality of learning and financial management methods involving the community, preparations for school training
Trainers	Fukunaga, Minami
Participants	Approx. 20 involved persons at MoEST (Inspectors, C. PEA, PEA etc.)
School Training	
Schedule	July 7th, 8th
Venue	Crossroads Hotel
Objective	Acquiring activity plan formulation methods to improve quality of learning and financial management methods involving the community
Trainers	Approx. 20 involved persons at MoEST
Participants	30 PTA members at 10 pilot target schools (Committee Chair, Principal and Secretary, Treasurer)

Appendix 2. Monitoring: Information Concerning Elementary School in Malawi

1. Schedule: June 22nd – 24th 2021
2. Monitoring target schools: 10 pilot target schools

1. Monitoring results

Learning environment	・ Due to a large deficiency in the number of classrooms for the large number of students, classes are held outdoors by a majority of schools. ・ Many schools divide the classes into morning and afternoon sessions as a measure to cope with the shortage of classrooms and prevent infection. ・ There are cases in which teachers come to work by car, and stay at the houses of other teachers who live in the vicinity. ・ Since there are many students per classroom, useful measures are needed for group work when implementing TaRL. ・ The blackboard is in front in some classrooms, and in the rear in others. ・ There are many cases, especially in the early grades, that desks and chairs are removed from classes in order to accommodate more students in the classroom, and classes are held on the floor after putting down a rug.
School activity plans	・ Schools have an Action Plan, and are apparently used to making Action Plans. ・ A portion of schools divide Action Plans into plans for the use of government subsidies and plans for the use guardian and community funds. In addition, there were also statements that there is a rule that these plans must be divided. ・ Action Plans include a diverse range of content, such as coronavirus measures, measures to prevent the use of drugs, and environment programs such as the building of walls, but it is unclear the extent to which resources can be utilized to improve academic ability. ・ The printing costs for regular tests are included as a large cost in action plans, so there is a high possibility funds can be used for learning activities. ・ There is time for remedial lessons at each school, which is designated without lesson time for 1st to 4th year students in elementary school, and outside of lesson time for 5th to 8th year students. In addition, these lessons are held before the start of classes or after the start of classes depending upon the school.

	・ The amount that is paid by the guardians for action plans differs from school to school, but there are many cases in 1000 Malawi-kwacha or less is collected per guardian for each school term. ・ According to the principals of schools which were monitored, changes may be made to action plans, and there is no problem if new action plans are made which change the content or the period. ・ At this point in time, no remedial lesson activities are being conducted by guardians or local residents. On this point, there were no negative opinions concerning the act of participating. ・ The existing action plans are based on the USAID training content, and the training period is 10 days.
School enrollment/withdrawal status	・ Girls comprise the majority of students, with boys not coming to school in many cases since they are taking care of livestock or doing day labor jobs. There was a division of opinions, with some principals saying that "This tendency is more conspicuous for schools in the countryside" and other principals saying "The target schools for this pilot project were all in the city, and more girls are attending school because the parents are educated". ・ Early marriage and early pregnancy were conspicuous as the reason for girls leaving school from around the 5th grade. However, there are many 13 and 14-year-old students in the 5th grade since they enter school at a later age.
SMC/PTA	・ There are three main organizations at schools: PTAs, SMCs and mothers' groups. PTAs focus on mobilizing guardians for fund raising, SMCs are involved in fund operation and management, and mothers' groups are mainly in charge of getting girls to enroll in school. ・ Each school has one bank account, and this account is used by the PTA, SMC and mothers' group. The principal and chairman or treasurer of each organization have signing authority for the account. ・ There is a rule that there must not be any overlapping of the representative director of the SMC, PTA and mothers' group. The treasurer must also be a different person for each organization. ・ Selection of the representative director of each organization is done in many cases by means of self-nomination or nomination by another person. The response was received that all schools "Do not have a system" where SMC is selected from PTA. ・ As a general rule at many schools, the principal is the secretary of the PTA and a guardian is the secretary of the SMC. ・ There is no hierarchy for these three organizations, they are simply separate organizations.

Appendix 3. Monitoring of Democratic Election Implementation

1. Schedule: June 22nd – July 6th, 2021
2. Schools monitored: Four schools (DZENZA School, MSAMBACHIKHO School, LIKUNI GIRLS School and KAMKODOLA School)
3. Monitoring results

Advance preparations	・ It was verbally confirmed at all four schools that a “Meeting of involved parties” and “Resident meeting to share information” were held before the democratic election. ・ At one school, “summons to election” with the name of each student were distributed, and were collected from the guardians who participated in the democratic election to confirm the guardians who attended.
Number of participants	・ Participation by the expected number of guardians / local residents with respect to the number of students was not obtained at any of the four schools. The fact that implementing several resident meetings in the short period of a few weeks at schools in Malawi that have a large number of students was presumed to be a cause of the low participation rate.
Democratic election implementation method	・ The tools required for democratic elections (election booths, ballots, ballot boxes, reception desks, etc.) were all prepared before the start of the election at all four schools. ・ Simple election booths made from plastic sheets and poles were built at two schools, and empty classrooms were used at the other two schools. ・ Voting for the chairperson post and treasury post was performed at the same time at some schools, and separately at others, but proceeded without any problems for both methods. ・ Due to the fact that there was the misunderstanding that there must be four candidates at two schools since the ballot distributed by the project was in four colors, this point needs to be explained in the future. ・ At one school, since the current secretary of the SMC stood as a candidate and was elected to be chairperson of the PTA, the decision was made to hold another democratic election to select the secretary of the SMC.
Issues	(1) As stated earlier, the number of participants in the democratic election was low compared to the number of students. In this pilot project, it was recommended that two resident meetings be held for implementation of the democratic election as in other countries, but it is very difficult to hold several resident meetings in Malawi where the schools are large in a short period of time. Therefore, content needs to be created in the future

	to enable the sharing of information and holding of the democratic election in one day. (2) At one school, a process of the secret ballot in which voters cast their ballots in a secret box, while throwing away the ballots not selected, placing the ballots in a separate envelope and then in an another ballot box was used. However, the process needed to be explained again due to a lack of understanding of voters. Some election management committee members were not aware of this problem. Therefore, this process needs to be clarified during training to make it more reproducible for participants. (3) Up until now, democratic elections have been held by distributing colored paper and envelopes in advance. However, due to the circumstances in Malawi where there are many students and guardians, it is difficult to implement this process from the standpoint of logistics and cost. Therefore, the method used needs to be reconsidered.

Appendix 4. Monitoring of Math Baseline Test

Baseline assessment was implemented at the pilot schools from June 22nd to 25th. The following things were confirmed when monitoring was performed.

Issue Found	Solution Implemented
• Some schools did not observe the prescribed testing time. Therefore, a notice was sent to ask that the testing time be observed. • Students were absent from test at many schools. • Students were not able to take the test for a variety of reasons. • Test was held with students sitting on ground at many schools since there were no desks. • Since there are many students compared to the size of the classroom, some students were observed cheating.	• Contact by means of WhatsApp to make sure testing time is being strictly observed. • Retesting was performed for students who were late on the day of the text. However, expected number of students did not show up. • Instruct teachers to keep a certain distance between students and monitor students to prevent cheating.

Attachment 5-2: Malawi Trial Report

(Implementation)

Development and Scale-up of Improving Children's Learning Model through Community Participation in the African Region

Field Survey Report "School for All" Model Rollout Feasibility study

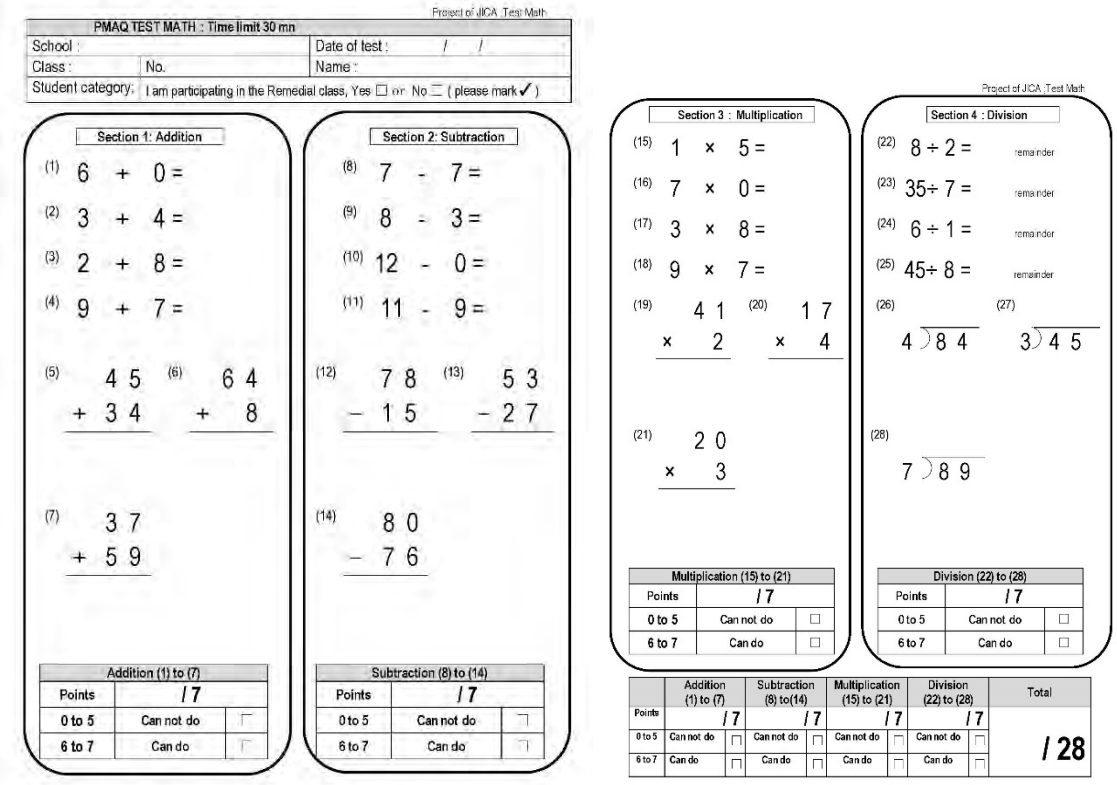
January 2022

1. Summary of End-line Test Results

The pilot activities in Malawi clarified that the math training and foundation model for 'School for All' is effective in improving children's basic mathematical abilities.

(1) Content of End-line Test

As in the case of the baseline test, the end-line test was given on the four arithmetic operations with integers as a basic learning content. There were seven problems for each of the four operations (addition, subtraction, multiplication, and division), and minor revisions were made to the problems, with no changes made to the difficulty of the problems compared to the content used for the baseline test. The test problems are shown in the diagram below.



(2) Time of Test and Number of Target Schools

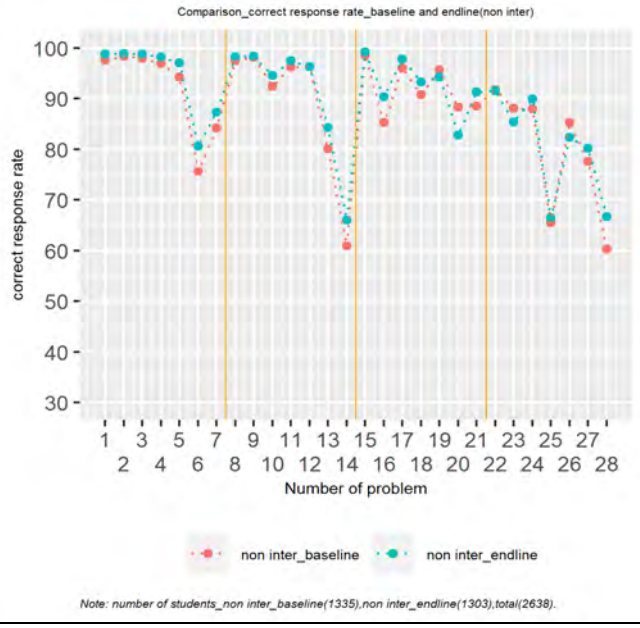
The end-line test was held at the beginning of November for a total of 15 schools, consisting of five schools where the math training/foundation model was used, five schools where the foundation model was used, and five schools where intervention was not performed.

An overview of the intervention content and target number of students for each group is provided below.

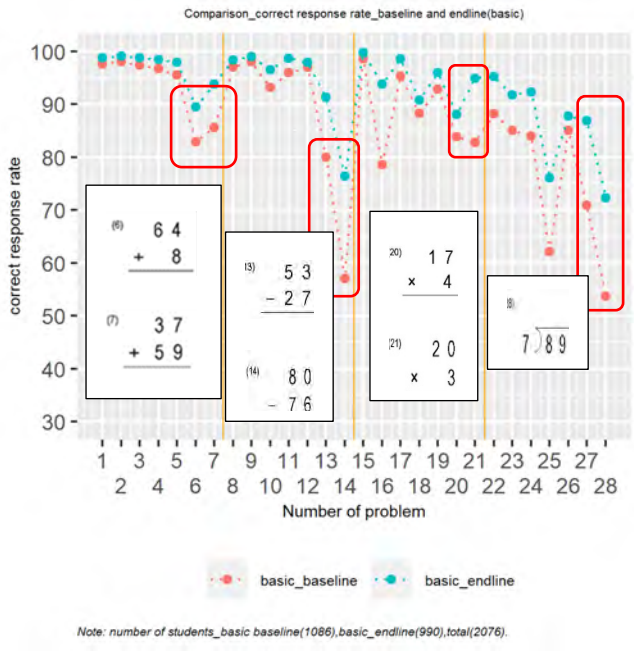
	Math Training/Foundation model for 5 Schools (Math/basic)	**Foundation model for 5 Schools (Basic)**	**No intervention for 5 schools (Non-intervention)**
Intervention content	• Implementation of foundation model (democratic election/action plan training): June/July • Implementation of math training: August • Implementation of remedial activities: September – November	• Implementation of foundation model (democratic election/action plan training): June/July • Implementation of remedial activities: September – November	None
Baseline test Implemented at end of June	Total: 2006 students Nkhukwa School (112 students) Kankodola School (730 students) Kauma School (523 students) Msambachichiko School (362 students) Dzenza School (278 students)	Total: 1086 students Airbase School (104 students) Buluzi School (160 students) Chagogo School (125 students) Likuni Girls School (528 students) Lilongwe School (169 students)	Total: 1335 students Chimwala School (366 students) Ching'ombe School (74 students) Likuni Boys School (116 students) mvama School (476 students) Njewa School (302 students)
End-line test Implemented at beginning of November	Total: 1823 students Nkhukwa School (117 students Kankodola School (681 students) Kauma School (462 students) Msambachichiko School (367 students) Dzenza School (196 students)	Total: 990 students Airbase School (135 students) Buluzi School (126 students) Chagogo School (136 students) Likuni Girls School (430 students) Lilongwe School (163 students)	Total: 1303 students Chimwala School (364 students) Ching'ombe School (84 students) Likuni Boys School (181 students) mvama School (456 students) Njewa School (213 students)

(3) Test Results

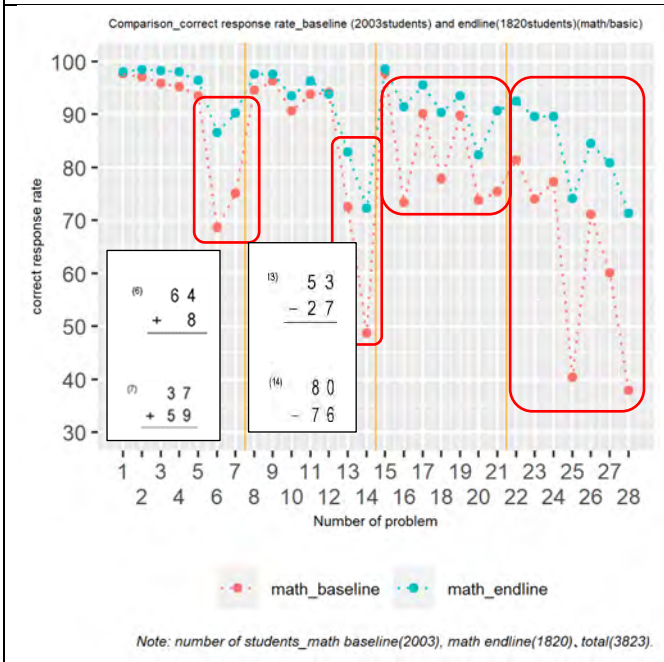
1. Academic ability does not improve without intervention

Comparison of baseline / end-line correct answer rate at non-intervention schools	
	In the graph to the left, the horizontal axis indicates the problem number, and the vertical axis indicates the correct answer rate. As shown in the graph, there was almost no change at non-intervention schools between the baseline (red line) and end-line test (blue). In other words, the basic math ability of the children is not improved at non-intervention schools in Malawi where only regular classes are implemented.

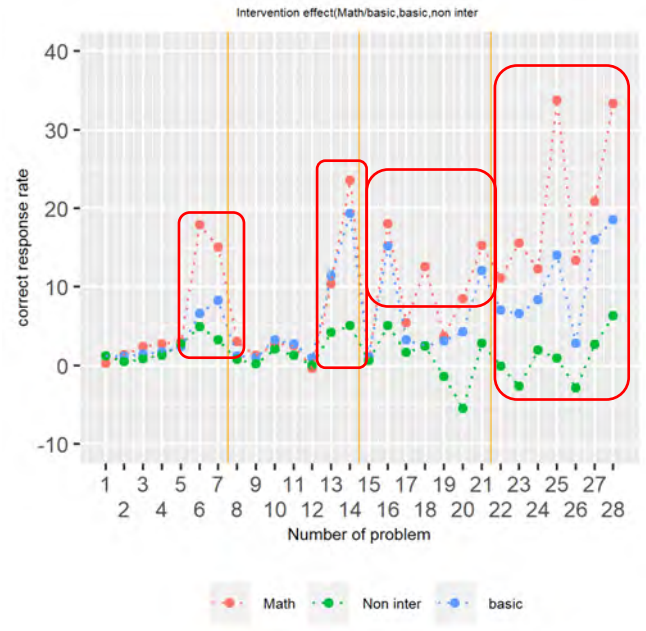
2. Foundation model intervention has effect of improving academic performance

Comparison of baseline / end-line correct answer rate at foundation model intervention schools	
	In the graph to the left, the horizontal axis indicates the problem number, and the vertical axis indicates the correct answer rate. As shown in the graph, the correct answer rate improved in the end-line test (blue) compared to the baseline test (red line) at schools where the foundation model was introduced. In particular, there were improvements for addition with carry over (problem nos. 6/7), subtraction with borrowing (problem nos. 13/14), multiplication with carrying or by a number ending in zeros (problem nos. 20/21) and division with a remainder (problem no. 28). In other words, the “School for All” foundation model has high potential to improve the basic math ability of children.

3. Math training/foundation model introduction has effect of improving academic performance

Comparison of baseline / end-line correct answer rate at math training/foundation model schools	
	In the graph to the left, the horizontal axis indicates the problem number, and the vertical axis indicates the correct answer rate. As shown in the graph, the correct answer rate improved in the end-line test (blue) compared to the baseline test (red line) at schools where math training/foundation model were introduced. In particular, there were improvements for addition with carry over (problem nos. 6/7), subtraction with borrowing (problem nos. 13/14), and all problems for multiplication and division. In other words, the "School for All" math training/foundation model has high potential to improve the basic math ability of children.

4. Learning improvement effect was highest at math training/foundation model schools

Improvement in baseline / end-line correct answer rate: Math training/foundation model schools, foundation model schools, non-intervention schools	
	In the graph to the left, the horizontal axis indicates the problem number, and the vertical axis indicates the improvement points (end-line correct answer rate – baseline test correct answer rate). The red line is for math training/foundation model schools (Math), the blue line is for foundation model schools, and the green line is for non-intervention schools (Non-inter). This graph indicates the following. **(1) Effect of foundation model** : Difference between blue line and green line **(2) Effect of math training/foundation model** : Difference between red line and blue line As shown in the graph, the math training/foundation model has the highest learning improvement effect.

(4) Considerations Related to Test Result Improvement

One of the reasons why the "School for All" math training/foundation model had such positive effect in improving the basic math performance of children in Malawi is that the measures taken to address the challenges in Malawi have been effective. The fact that there are many students per school or per classroom in Malawi has been considered to be a major factor hindering improvement in low academic performance. In this trial model, it is thought that multifaceted direct intervention for the issues of the learning environment, learning time and the quality of teachers has facilitated improvements in learning. In particular, the homework model that was introduced during this activity can be considered a successful case judging from the implementation status at home and implementation rate of homework. Therefore, the implementation of homework assignments is a successful example (good practice) which can be applied to educational settings in developing countries, where people are unable to secure sufficient time for learning for various reasons.

	Issues (Challenges)	Measures
Learning environment	• Appropriate learning environment for children not provided due to lack of desks/teaching materials.	• Guaranteed appropriate learning environment by securing teaching materials for each child.
Learning time	• Learning opportunities are inadequate and learning time is short due to "large number of students, small number of classrooms, and splitting of day into two and more sessions".	• Learning time was increased by including remedial activities in action plan. • Learning time was increased by introducing homework to be done at home in addition to remedial activities at school. • In addition, the homework implementation rate was increased by having guardians check the completion status of homework. (The attendance rate of remedial activities at math training schools was 79%, and the homework completion rate was 77% [for 4 out of 5 schools where collection of data succeeded])
Quality of teachers	• Quality of teaching methods and teaching content by teachers is not high. • (No improvements in learning observed at non-intervention schools)	• Quality of teachers was heightened by setting required learning range for children and proposing appropriate teaching plans or demonstrating well-organized systematic teaching techniques. • Teaching methods that have already been introduced during this activity have a high level of compatibility with Structured Pedagogy, an

		improved well-organized teaching technique used by USAID, and teachers found it easy to introduce them.

JICA's School for All Pilot Project June-November 2021

4th February 2022
Ministry of Education and
School for All Project Team

Summary of Presentation

Objective:

To share the results of JICA's pilot activities on improving the functioning of PTAs and the basic learning performance

Findings: JICA's model can

① enhance the functioning of PTAs;

② improve the basic learning performance of students;

③ produce synergy effects with the interventions of the Ministry of Education and other development partners.

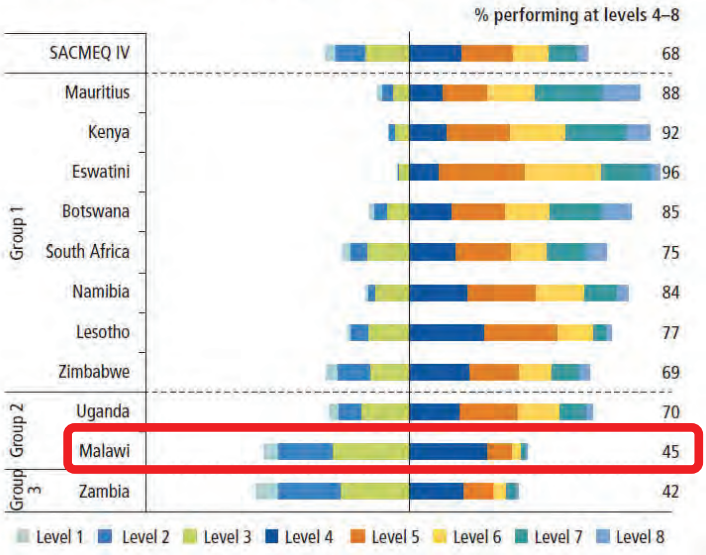
Table of Contents

Context and Background of the Pilot Project

Malawi is behind in Reading and Math at the primary education level

Reading

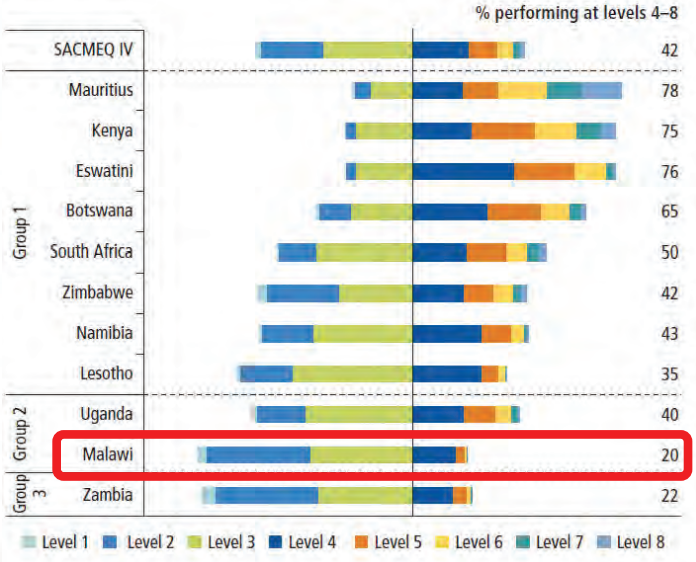
Figure 2.9 Percentage of Grade Six Students Performing at SACMEQ IV (2013) Reading Performance Levels in 11 Southern and East African Countries, by Group



Source: Constructed from KNEC 2017.
Note: Performance levels are based on Southern and Eastern Africa Consortium for Monitoring Education Quality study no. 4 (SACMEQ IV), administered in 2013. Numbers shown to the right of each bar are the percentages of students reading at levels 4, 5, 6, 7, and 8. For definitions of country groups, see chapter 1 or notes to figure 2.3; no Group 4 countries participated in SACMEQ.

Mathematics

Figure 2.10 Percentage of Grade Six Students Performing at SACMEQ IV (2013) Mathematics Performance Levels in 11 Southern and East African Countries, by Group



Source: Constructed from KNEC 2017.
Note: Performance levels are based on Southern and Eastern Africa Consortium for Monitoring Education Quality study no. 4 (SACMEQ IV), administered in 2013. Numbers shown to the right of each bar are the percentages of students performing at levels 4, 5, 6, 7, and 8. For definitions of country groups, see chapter 1 or notes to figure 2.3; no Group 4 countries participated in SACMEQ.

Overview of Pilot Project

Objectives	Experiment of School For All Models ("Foundational Model" + "Learning improvement Model in Math") with Parents-Teachers Association (PTA) at 10 public primary schools in Lilongwe District, Malawi
Period	June 2021 – November 2021 (6 months)
Expected Outcome	• Improvement of school governance • Improvement of students' learning performance in math by the organization of remedial activities

Target

Group 1: 5 schools for "Foundational Model " (Democratic election, school action plan, and community audit)			Group 2: 5 schools for "Foundational Model" + "Learning improvement Model in Math"			Group 3: 5 school for "Control" (No intervention)		
School Name	**N. of students (June)**	**District**	**School Name**	**N. of students (June)**	**District**	**School Name**	**N. of students (June)**	**District**
Buluzi	160	Lilongwe Rural East	Nkhukwa	112	Lilongwe Rural East	Likuni Boys	116	Lilongwe Rural East
Chagogo	125	Lilongwe Rural East	Kankodola	730	Lilongwe City	Ching'ombe	74	Lilongwe Rural East
Lilongwe L.E.A	169	Lilongwe City	Kauma	523	Lilongwe City	Mvama	476	Lilongwe City
Likuni Girls	528	Lilongwe Rural West	Msambachichiko	362	Lilongwe City	Njewa	302	Lilongwe Rural West
Airbase	104	Lilongwe Rural West	Dzenza	278	Lilongwe Rural West	Chimwala2	366	Lilonwe East

Note: School location (District) and the number of students were taken into account for grouping. The low-performing schools at the baseline test were classified into Group 2.

5

Schedule from June 2021 to November 2021

Period	Activities
June 2021	**Training on "Foundational Model "**for 10 schools **(Democratic election)** • Democratic election was held in each school • Base-line test in Math
July 2021	**Training on "Foundational Model "**for 10 schools **(school action plan, and community audit)** • General assembly for identifying problems and searching for solutions • General assembly for validation of school action plan • Monitoring by trainers
Mid-August 2021	**Training on "Learning Improvement Model in Math"** for 5 schools
September-November 2021	• Organization of remedial activities at schools • Monitoring by trainers
November 2021	• End-line test in Math • End-line survey (Interview) on PTA

Activities on June and July 2021

June 2021	**Training on "Foundational Model "for 10 schools (democratic election)** • **Democratic election was held at each school** • **Base-line test in Math**

Picture1: Training for trainers @Sagecoa Golden Peacock Hotel

Picture2: Training for headteachers @Sagecoa Golden Peacock Hotel

Picture3: Democratic election @Dzenza

Picture4: Baseline test

July 2021	**Training on "Foundational Model "for 10 schools (school action plan, and community audit)** • **General assembly for identifying problems and searching for solutions** • **General assembly for validation of school action plan** • **Monitoring by trainers**

Picture5: Training for PTA members @Cross Road hotel

Picture6: General assembly @Chagogo

Picture7: General assembly @Kankodola

Picture8: General assembly @Kauma

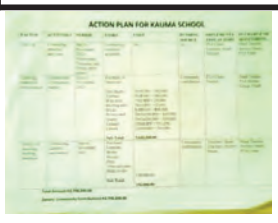
Result of election

Elections were held at all the schools and remedial classes were programmed

	Member of PTA	General assembly	Action plan and community audit
After the training	All the 10 schools held the democratic elections by secret voting	The frequency of general assemblies (with executive member or with community) has increased	Financial resources were mobilized for activities of PTAs. More remedial activities were programmed and executed.
Comments from the interview	▪ there is hardworking spirit since people choose those who were wanted by community and are accountable ▪ we have had a working committee and committed reliable , accountable , no corruption ▪ There is inclusion in decision making	▪ we meet regulary , twice a month and there is participation in the community ▪ the community members participate nowdays more than the past in the meeting ▪ As a committee , we collect the contribution ourseves for acountabilliyty and transparency sake	▪ Since parents are now giving funds willingly, we are able to implement other projects ▪ After the training we tried to increase number of remedial activities to enhance the performance

Picture9: The new member of PTA @Dzenza

Picture10: General assembly with executive @Likuni girls



Picture11: the action plan including the remedial activities based on the community funds @Kauma

Activities from August to November 2021

Mid-August 2021	•	**Training on "Learning Improvement Model in Math" for 5 schools**

Picture12: Training for trainers @corean garden lodge

Picture13: Training for the participants from schools @Boma center

September-November 2021	•	**Organization of remedial activities at schools**
	•	**Monitoring by trainers (Transport cost covered by the Project)**
November 2021	•	**End-line test in Math**
	•	**End-line survey (Interview) on PTA**

Picture14: remedial activities @Nkhukwa

Picture15: remedial activities @Msambachichiko

Picture16: remedial activities @Kauma

Picture17: remedial activities @Kankodola

Overview of learning improvement model

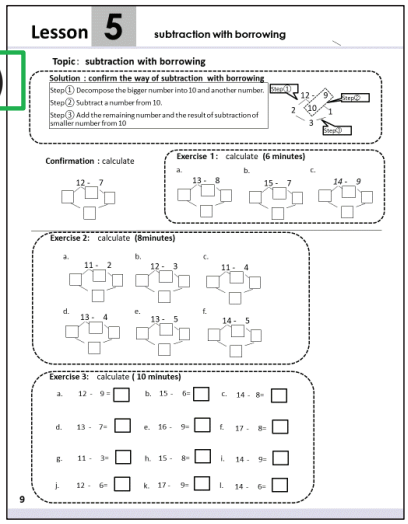
Outline of Activities	
Objective	Improves the percentage of correct answers for basic operations that use two digits and result in a maximum of three digits.
Target grade	6 grade students (Set in consideration of learning environment, number of students, etc.)
Period	From September to Mid November
Design of intervention	(1) remedial activities about the solution + checking the homework (2) remedial activities with exercises (3) Homework (done by students at home) (about 6 simple exercises learned on the day)
Strategy of intervention	Remedial activities (1) and (2) are basically implemented by teachers, but those who want to help as community facilitators, can also participate at voluntary basis Homework (3) Parents or community members check whether homework is done by each student
Learning materials	1 Workbook : 2 Guide book for teachers (facilitators) 3 Homework: One learning material for students

Learning Contents				
	No.	(1) remedial activities with teacher	(2)remedial activities with the exercises	(3) Home work
Addition	Day1	Composition until 100	They go over what they learnt with teachers during the remedial activities by working on the exercises.	The contents are selected from the 2)remedial activities with the exercises
	Day2	1digit+1digit with carrying		
	Day3	2digit+2digit without carrying 2digit+1digit with carrying		
	Day4	2digit+2digit with carrying		
Subtraction	Day5	2digit-1digit with borrowing		
	Day6	2digit －2digit without borrowing		
	Day7	2digit－2digit with borrowing		
	Day8	2digit－2digit with borrowing		
Multiplication	Day9	Multiplication table （2to 5）		
	Day10	Multiplication table （6to 9）		
	Day11	Multiplication table		
	Day12	2digit × 1digit		
	Day13	2digit × 1digit with carrying		
	Day14	2digit × 1digit with carrying		
Division	Day15	Division without remainder		
	Day16	Division without remainder		
	Day17	Division with remainder		
	Day18	Division with remainder		
	Day19	2digit ÷ 1digit		
	Day20	2digit ÷ 1digit		
	Day21	3digit ÷ 1digit		
	Day22	3digit ÷ 1digit		

Overview of mathematics contents

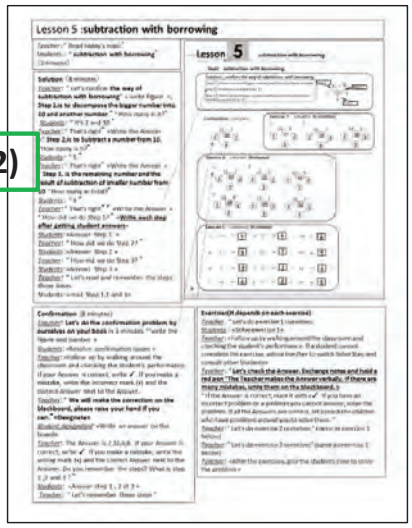
①Work book

(1)



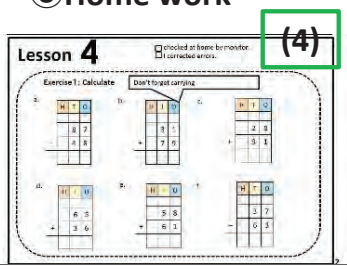
②Guide book for facilitators

(2)

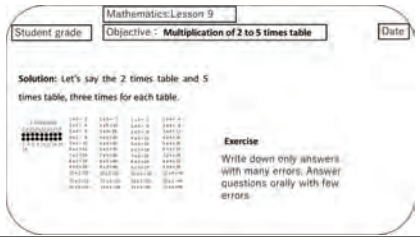


③Home work

(4)



④Presentation of blackboard



Element (1)

Maximized learning time for students
(Simplified explanations by teacher and increased time for exercises by students)

Element (2)

Standardization of teaching procedures and explanation methods

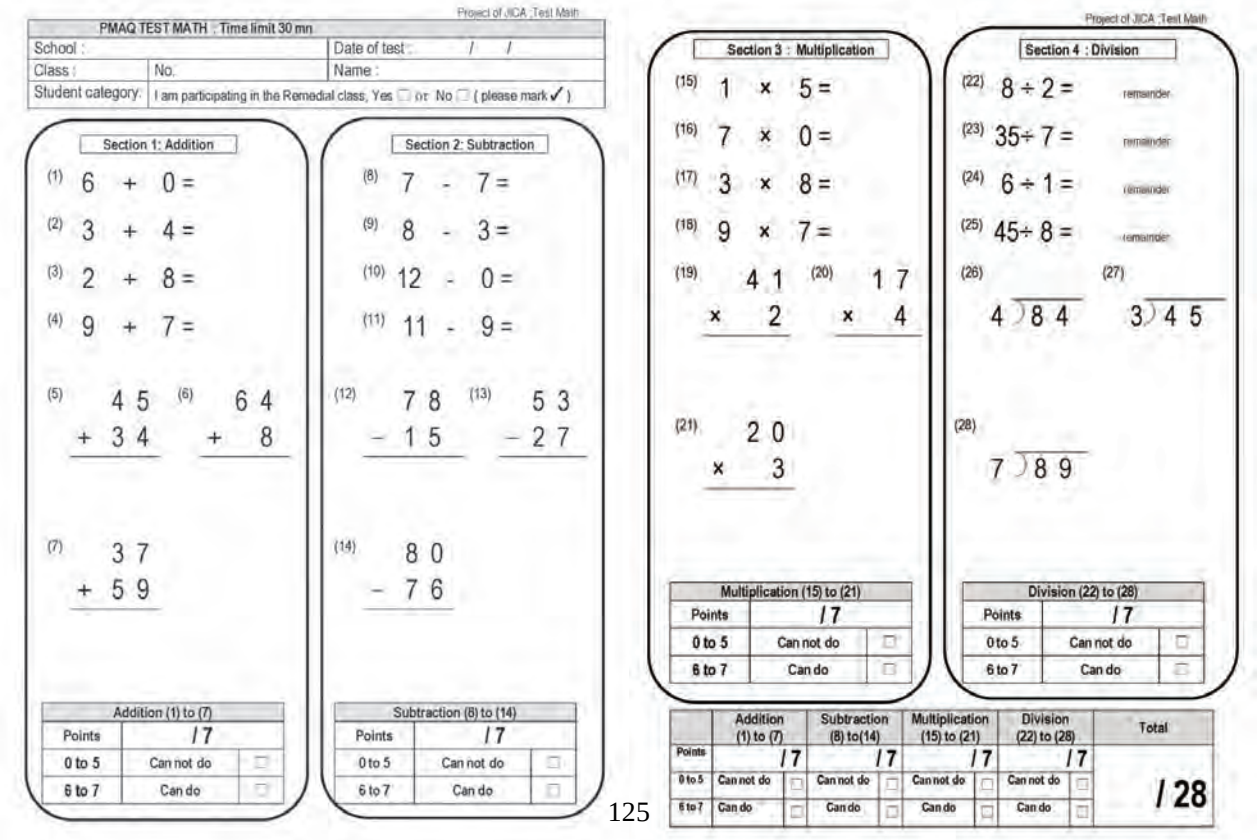
Element (3)

Provide teachers with a guidebook, and a student with a workbook and homework

Element (4)

Participation of parents and neighbors in monitoring students with homework

Overview of mathematics test



Results of test : Control and Math + foundational group

Bar plots of the percentage of students above 80 percent of correct response "Students who can do " rate by sections

Figure. A-1 Section1: Addition

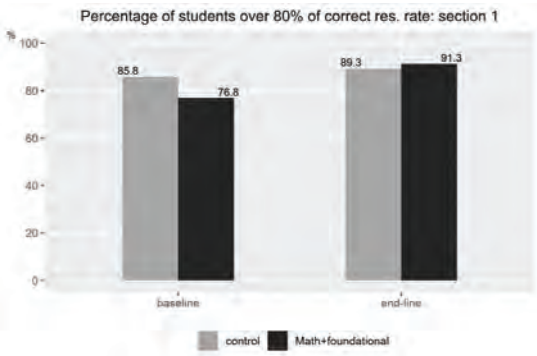


Figure. A-3 Section3: Multiplication

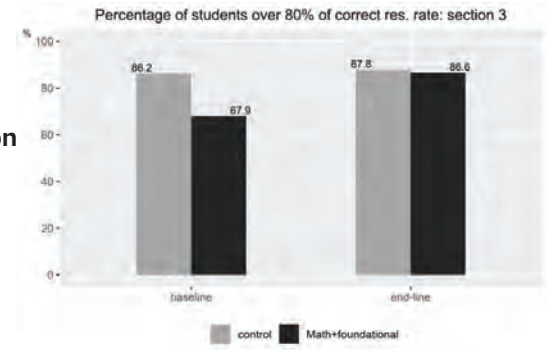


Figure. A-2 Section2: Subtraction

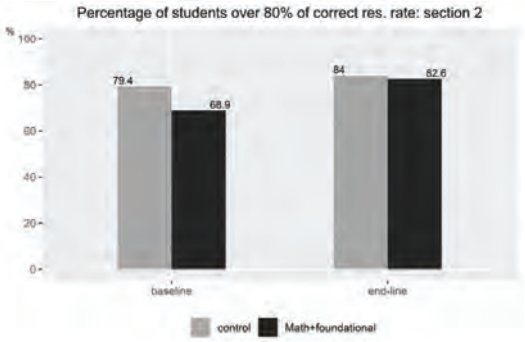
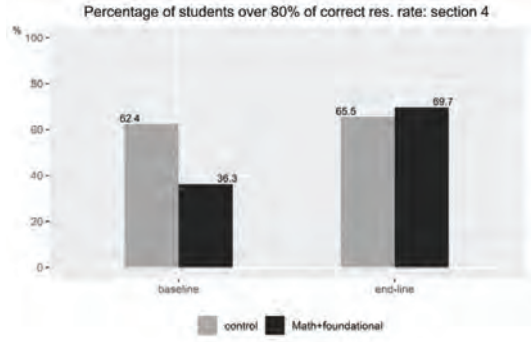


Figure. A-4 Section4: Division



Note. There are seven items in each section. Figures A shows the percentage of students who obtained over six points out of seven.
Number of students in math + foundational is 2003 (baseline) and 1823 (end-line).
Number of students in control is 1335 (baseline) and 1303 (end-line).

Results of test : Math + foundational group by school

Bar plots of the percentage of students above 80 percent of correct response "Students who can " rate by sections

Figure. B-1 Section1: Addition

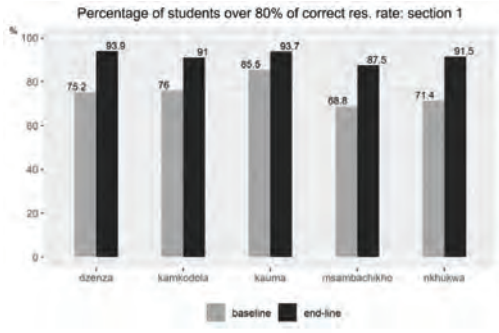


Figure. B-3 Section3: Multiplication

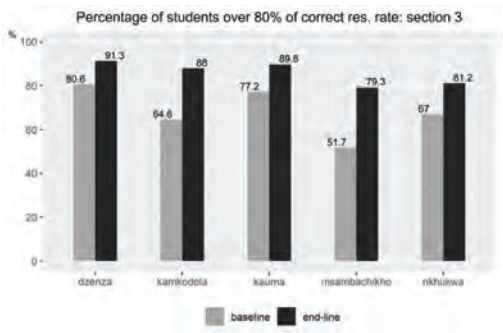


Figure. B-2 Section2: Subtraction

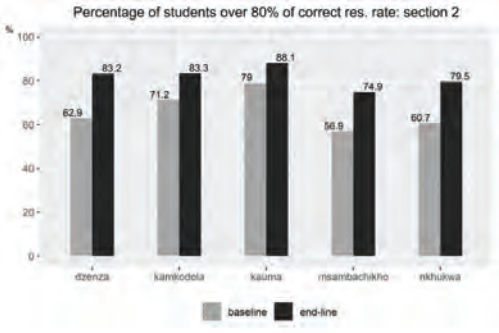
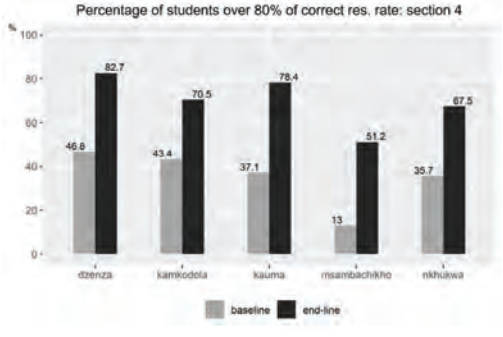


Figure. B-4 Section4: Division

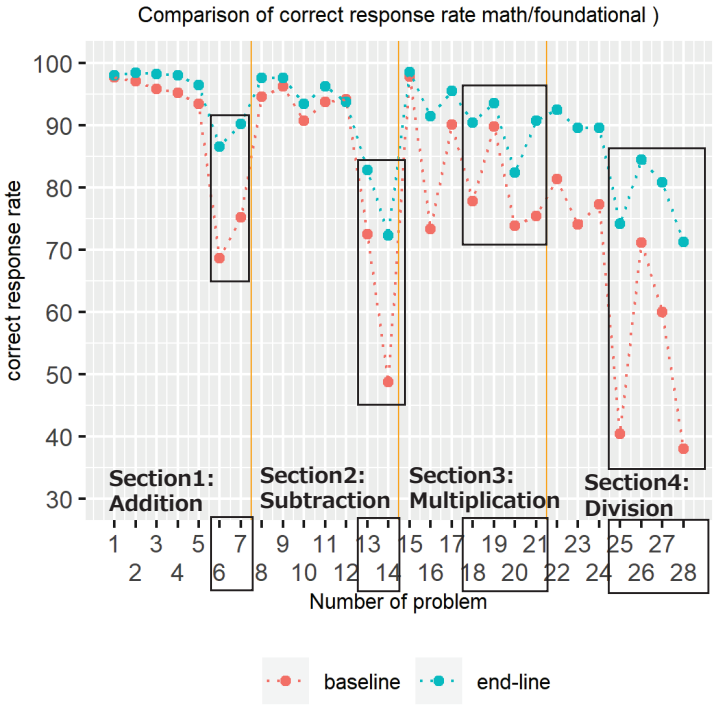


Note. Number of students. Dzenza: 278 (baseline) and 196 (end-line). Kamkodola: 728 (baseline) and 681 (end-line).
Kauma: 523 (baseline) and 462 (end-line). Msambachikho: 362 (baseline) and 367 (end-line). Nkhukwa: 112 (baseline) and 117 (end-line)

Results of test : Math + foundational group

Line graph of correct answer rate by a item

Figure. C-1



Section1: Addition

(6) 64 + 8 (7) 37 + 59

Section2: Subtraction

(13) 53 − 27 (14) 80 − 76

Section3: Multiplication

(18) 9 × 7 =

(19) 41 × 2 (20) 17 × 4 (21) 20 × 3

Section4: Division

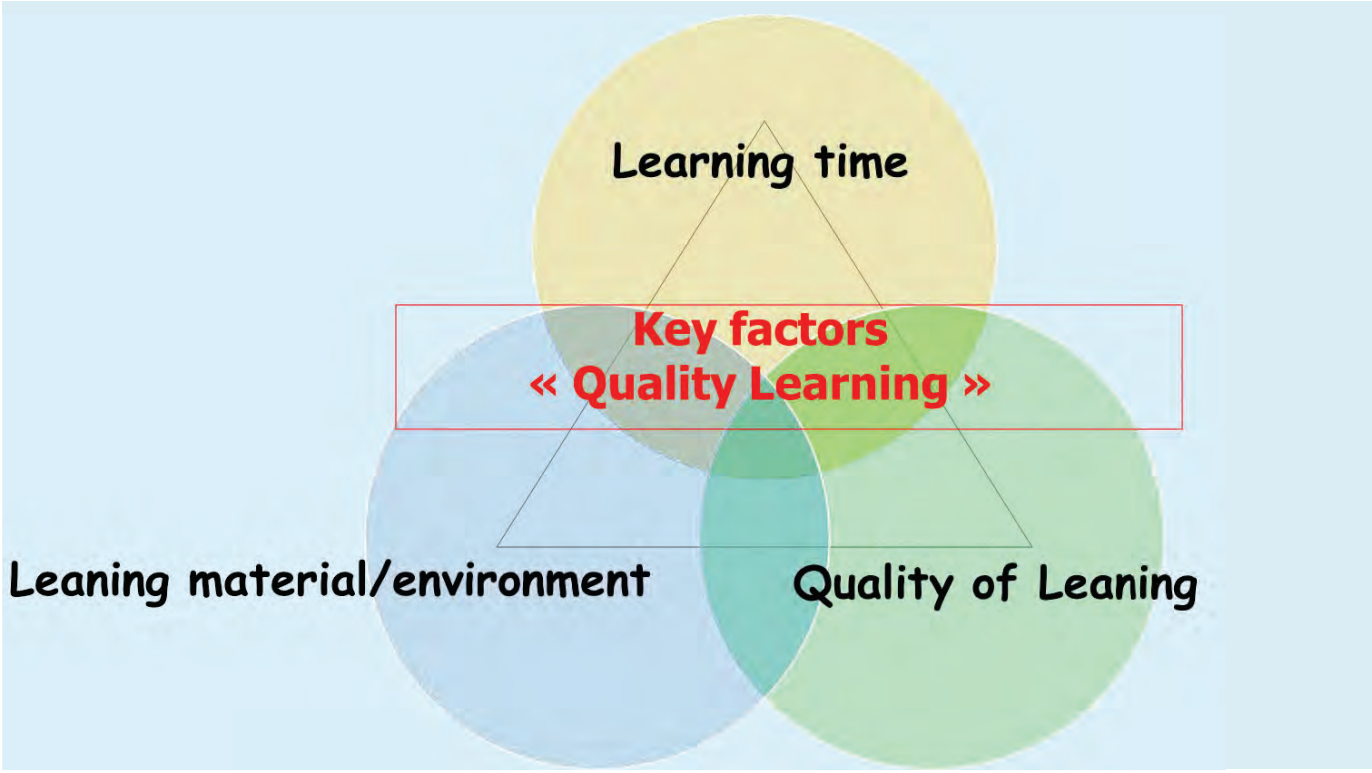
(25) 45÷ 8 = remainder

(26) 4)84 (27) 3)45 28) 7)89

Note. There are seven items in each section. Figures C shows the percentage of correct response

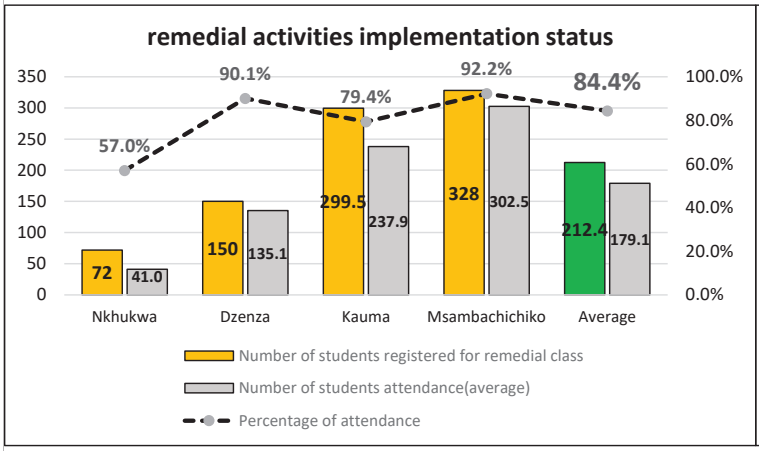
Analysis of success factors

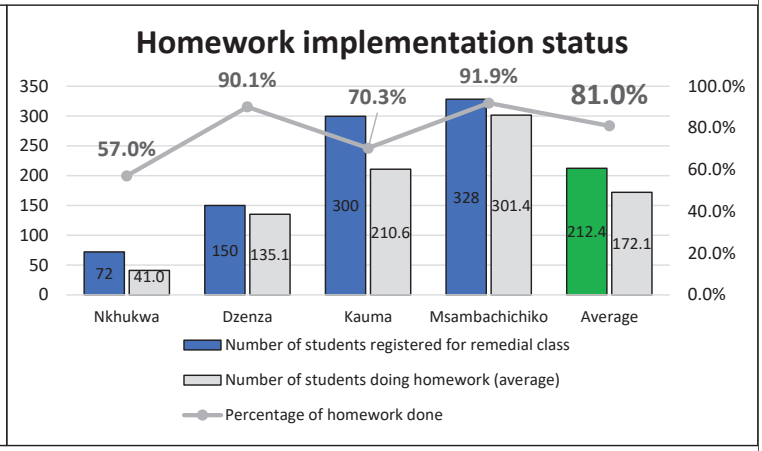
Three key factors influencing on the quality of education



Analysis of success factors

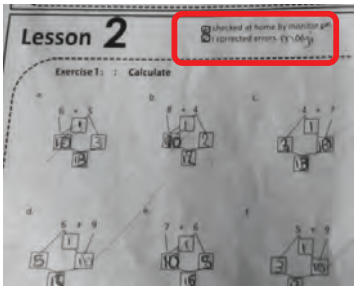
(1) **Increase in learning time:** high rate of implementation in remedial activities and homework





Note. There is no data for Kankodola because the actual results were not registered. All the other four schools carry out remedial lessons three times a week. Dzenza completed 16 lessons out of 22 lessons, Nhukwa, Kauma, Msamba chichiko finishes all 22 lessons

Picture18:
Many students attend the remedial activities



Picture19:
Many parents put their signature to show that they checked the home work

Analysis of success factors

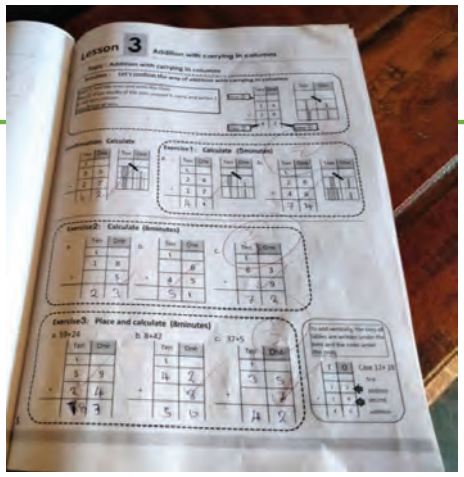
(2) Teaching techniques

Element (1) : Accomplished ✓
Maximized learning time for students
(Simplified explanations by teacher and increased time for exercises by students)

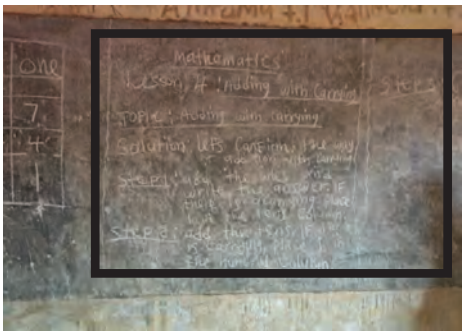
Element (2) : Accomplished ✓
Standardization of teaching procedures and explanation methods

Element (3) : Accomplished ✓
Provide teachers with a guidebook, and a student with a workbook and homework

Element (4) : Accomplished ✓
Participation of parents and neighbors in monitoring students with homework



Picture17: Exercises and corrections are properly implemented (Element (1))



Picture18 The explanation of the solution for the problem is written clearly on the blackboard (Element (2))

Picture19: Each student can learn individually (Element (3))

How do we increase the learning time?

Learning improvement model is **based on community participation**

PMAQ: Mechanism of producing results (Strategy2)

How do we reach learning improvement?

Overview of Pilot Project : Strategy

Situation

Learning Crisis

Cannot read and calculate

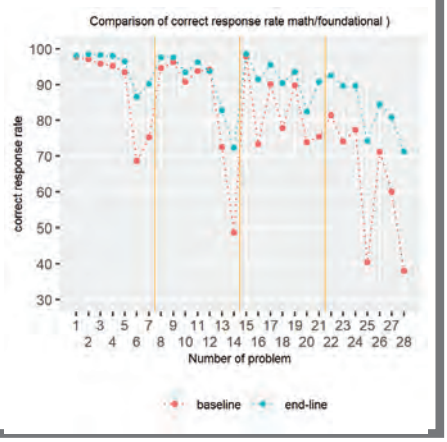
Solutions

Strategy 2
Improving learning quality
(Learning improvement Model)

Strategy 1
Improving school management through participation and collaboration of all stakeholders
(Foundational Model)

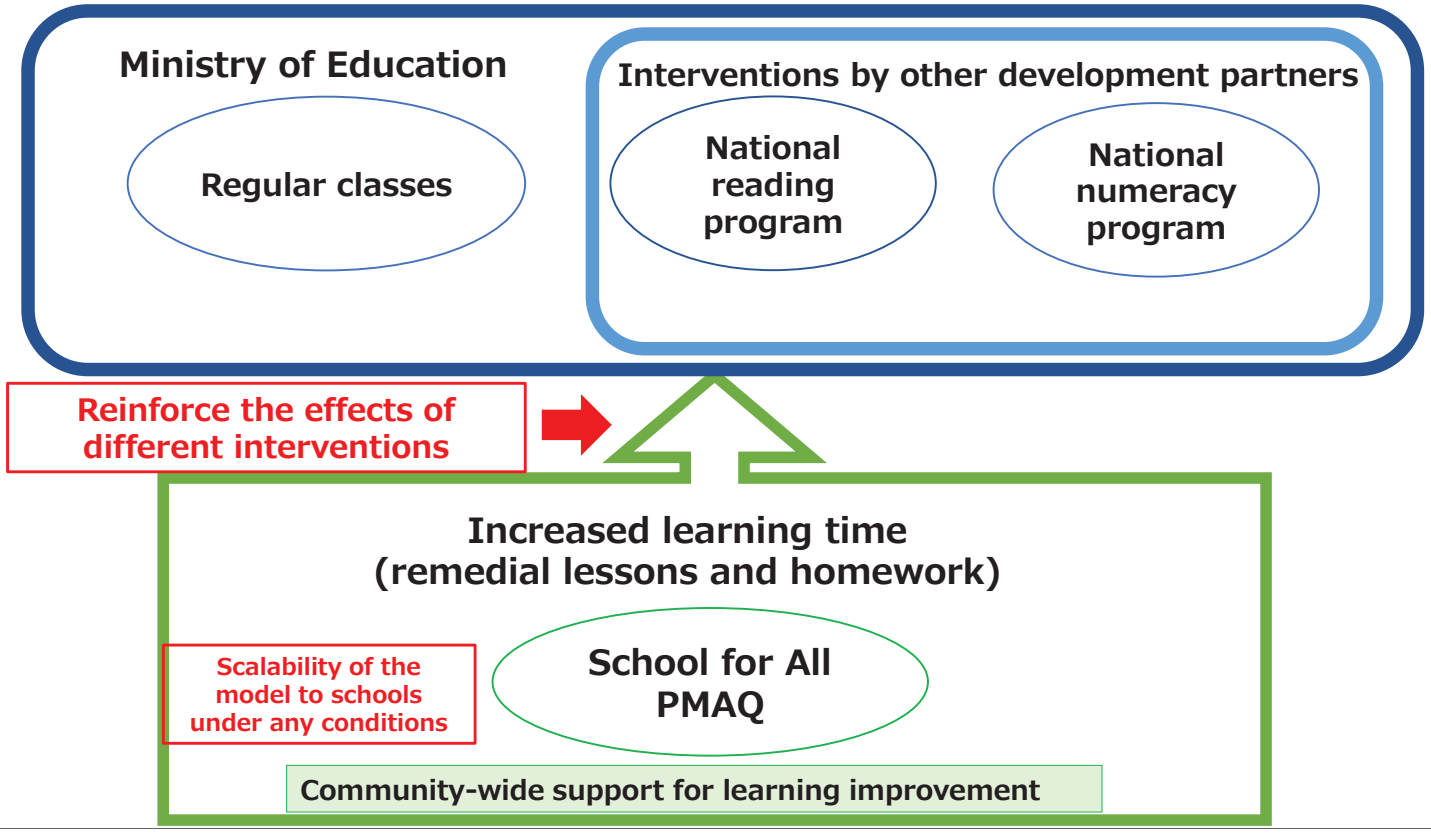
Results

Improvement in the percentage of students able to calculate



Scope for the future

Synergy effects of JICA's projects



21

1) Discussion

Please share your observations on the Pilot Project, for example, on the following aspects:

1. Democratic Election;
2. Organisation of General Assemblies;
3. Resource Mobilization by parents and community members;
4. Math Teaching Methods;
5. Remedial activities and
6. Homework, etc.

2) Experiences from other countries

Learning Improvement Model (Niger, Madagascar)

Girls Education (Niger)

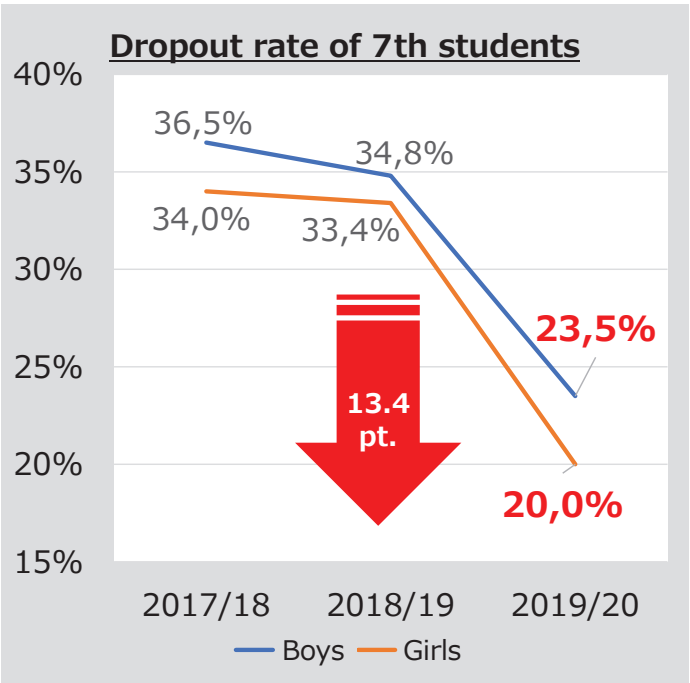
Community School Feeding Model (Madagascar)

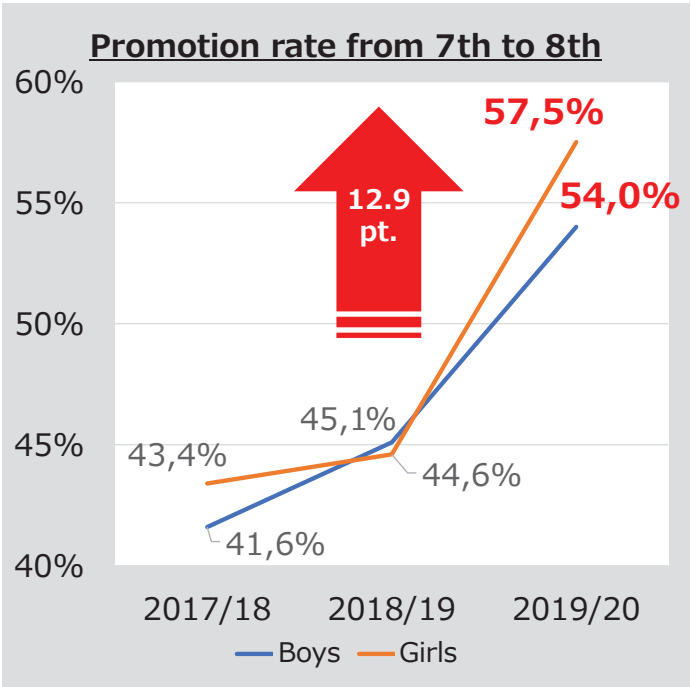
Pre-school Education Model (Madagacar)

Well-functioning SMC (Foundational Model)

2) Girls Education

Regional Campaign for Girls Education in 8 regions in Niger

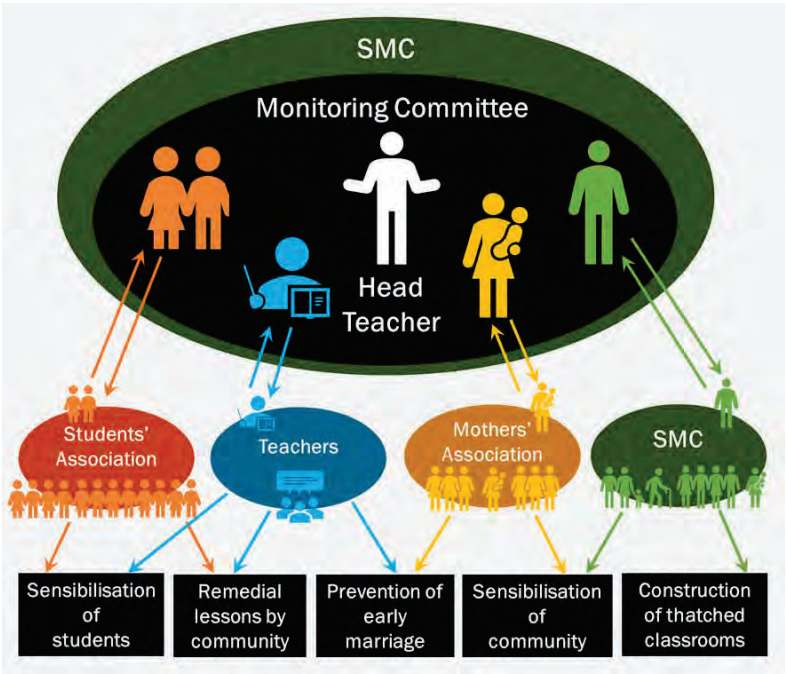


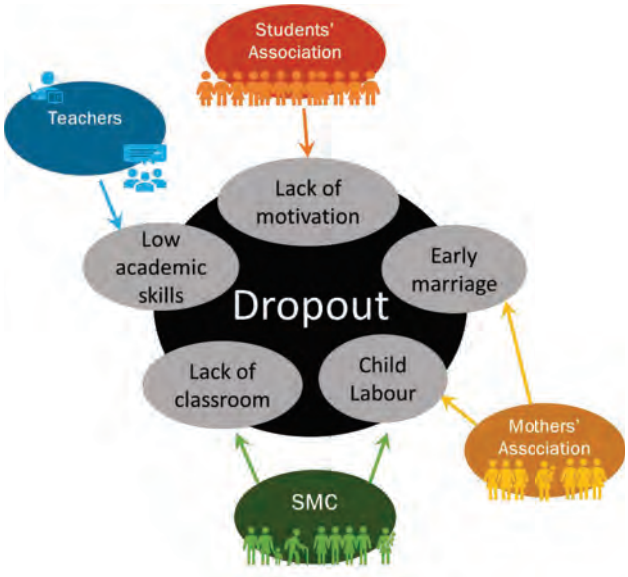


Target Grade : 1st year of Junior High School (7th Grade in Malawi)
Number of Direct Beneficiaries : **More than 210 thousand students** at the target grade

2) Girls Education

Monitoring Committee for the Prevention of Dropouts

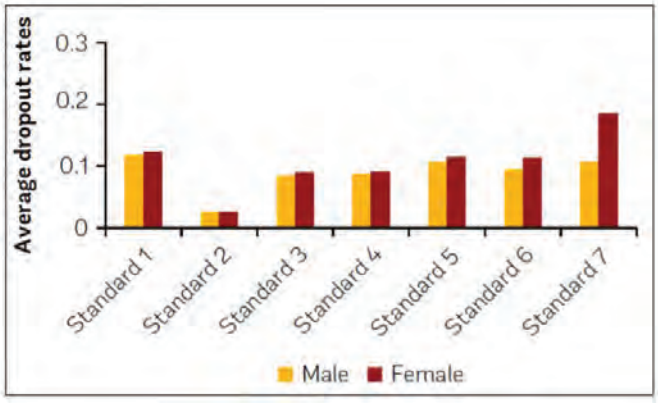




Identify the different causes of dropout and mobilize different actors to address each cause (Multi-sided approach)

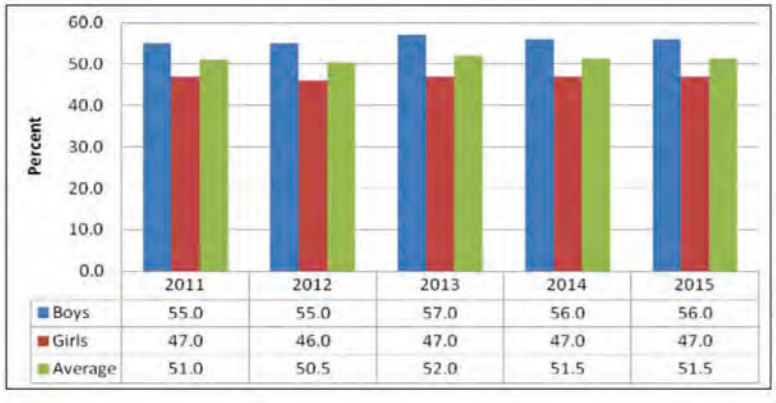
2) Situation of girls education in Malawi

Student dropout rates 2010-2015 for Standards 1-7, by gender



→ The dropout rate is higher among girls than boys especially at Standard 7

Primary school completion rates 2011-2015, by gender



	2011	2012	2013	2014	2015
Boys	55.0	55.0	57.0	56.0	56.0
Girls	47.0	46.0	47.0	47.0	47.0
Average	51.0	50.5	52.0	51.5	51.5

→ Girls are constantly behind boys in primary school completion rate, an average gap of 9 p.p. from 2011 to 2015,

Source: Australian Council for Educational Research (ACER). (2017, 7 18). *Girls' Primary and Secondary Education in Malawi: Sector Review, Final Report.* Retrieved from https://research.acer.edu.au/cgi/viewcontent.cgi?article=1031&context=monitoring_learning

3) Recommendations

- What challenges need to be addressed by JICA's School for Approach in the future?
- What kind of intervention is required to address these challenges?

Attachment 6: References

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